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Economic Bulletin for Asia and the Far East
Vol. XI No. 3. December, 1960

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TRANSPORT DEVELOPMENT IN RELATION TO ECONOMIC DEVELOPMENT IN THE COUNTRIES OF ASIA AND THE FAR EAST[1]

I. THE PRESENT STATUS AND PROBLEMS OF TRANSPORT IN COUNTRIES OF THE ECAFE REGION[1]

The importance of transport in economic development

In view of its important role in the process of economic growth, transport has been regarded as one of the strategic infrastructures of a developing economy. Indeed, transport is a necessary means for the expansion of both domestic and international trade, and, through such market enlargement, it brings numerous small isolated economic units into a wide exchange economy, thus stimulating further specialization and an increase in output and efficiency. For example, with the availability of cheap, speedy and far-reaching transport, farms or industries formerly distributing to relatively scattered and near-by markets find they can now serve a larger market area just as well by forming larger and more efficient production units. Similarly, industries collecting materials from near-by sources now find it possible to obtain them from a larger supply area without increasing the cost of shipment. Communities or regions so connected and integrated become less self-sufficient and more productive, and interregional trade grows on the basis of specialization according to comparative advantages. Thus, the development of transport not only adds to the national income by its own services, but—far more important than this — it makes an indirect contribution to the national income and development through the expansion of almost all sectors of the economy.

In addition to the widening of markets, transport also helps to make accessible new resources. In many parts of the ECAFE region, good agricultural lands, valuable forests, and deposits of minerals are known to exist in abundance. Yet, because of their inaccessibility, known resources are left unused and potential resources remain unexplored. Even where man has access to land and other natural wealth, lack of transport has often resulted in only partial utilization.

Furthermore, the construction of railways, roads, ports and other transport means stimulate the development of industries which supply materials and services to transport. For instance, the construction and operation of railways may be on such a scale as to lead to the development of coal, mining, and iron and engineering works. This induced industrial development, coupled with market expansion made possible by transport development, may constitute an important element of economic take-off.

In short, transport development contributes to economic development in three main ways: enlarging the market and thereby further stimulating economic specialization; helping exploitation of additional resources by making them accessible; and leading to the establishment or expansion of related industries. Together with other favourable factors, transport development would enable the economy to become more dynamic—carried forward by its own momentum towards higher efficiency and higher output. In this regard, countries of the ECAFE region have a long way to go before reaping the benefit of a fuller transformation of human and animal transport into modern mechanical transport. But the process is found to be highly remunerative, as evidenced by the history of economic development in the industrially advanced countries.

Post-war growth and pattern of traffic

GROWTH OF TRAFFIC

In the postwar years, practically all countries of the region suffered heavily from wartime lack of maintenance and damages, which called for urgent rehabilitation. In the case of the railways, rehabilitation centred largely on the replacement of rolling stock and track. In mainland China and India, however, significant additions to railway lines and rolling stock took place while the process of rehabilitation still continued. Elsewhere, little change in the total length of railways has taken place between the prewar and postwar period. In Burma, Ceylon, the Federation of Malaya, Indonesia and the Philippines, the total length of railways in 1957 was still lower than in 1938. The absence of major change in total length of railway line does not, however, mean that little has been done to the railway system as a whole. Steady progress has been made in the expansion and modernization of mobile equipment, improvement of operational efficiency and economies in fuel consumption, thus increasing the capacity of the existing lines.

The position as regards roads was broadly similar to that for railways, and centred on the reconstruction of the main network in the early postwar period. New construction for the most part took the form of either purely local roads to serve areas where development was taking place, or of by-passes to avoid congested sectors on trunk roads. The number of motor vehicles, however, increased rapidly in almost all countries.

War damage to waterways and ports has been repaired, but shipping facilities in general have not regained the prewar level.

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[1] Revision of E/CN.11/DPWP 6/L.3, a paper prepared for the sixth session of the Working Party on Economic Development and Planning, by the ECAFE Secretariat.

For most countries of the region listed in table 1, rail and road freight traffic combined showed a much higher rate of increase than the gross domestic product. Increases in domestic product commonly ranged from 2 to 5 per cent per annum, while rail and road traffic increase ranged from about 6.5 per cent per annum in Pakistan and the Philippines to nearly 20 per cent per annum in Thailand. A marked expansion of traffic took place especially in Cambodia, China: Taiwan, Indonesia, southern Korea, Thailand and southern Viet-Nam where, during the immediate postwar period economic activity had perforce remained at a low level because of the destruction and dislocation of war. Civil disturbance throughout the postwar period delayed the rehabilitation of transport in Burma where the progress of freight traffic was extremely slow. The broadening in the scope of the market economy and the increased extension of domestic supplies of food products and raw materials to inner parts of the countries concerned were other significant factors accounting for the increase in traffic. For this increase the considerable expansion of motor vehicles in almost all countries of the region was largely responsible, as more and more primitive transport means — such as bullock carts — were replaced by modern conveyances.

To some extent, the disparity between the rate of growth in gross domestic product and that in land traffic is attributable to the fact that in many countries of the region, domestic product in terms of value has increased less rapidly than traffic which reflects largely the volume and weight of products. This divergence was due chiefly to a more than proportionate increase in the volume of traffic than the rise in the production of primary products, which generally constitute the major part of production of these economies. In Japan, because of the existence of a more or less balanced development of transport and the economy as a whole, freight traffic rose more closely in proportion to the gross domestic product.

The increase in land traffic is even more marked in passenger than in freight traffic. In every country listed in table 1, the annual rate of increase in passenger traffic far exceeded the annual rate of increase in population. The main contributary factors are the rising level of economic activities and the integration of villages and their people into the main stream of national economic life, as well as the increase in social mobility and urbanization,[2] accentuated by refugee movements arising from wars, civil wars and general insecurity in the rural areas. The importance of the growth of urban concentrations is indicated by the fact that buses, taxis and private automobiles are largely concentrated in capital cities such as Bangkok, Colombo, Djakarta, Karachi, Tokyo, Manila, Rangoon and Tokyo.[3]

During the post-war period in Asia, the increase in railway freight traffic and in the number of automobiles was phenomenal and compared favourably with other regions of the world. Between 1948 and 1957, while the railway traffic of the world as a whole increased by less than 60 per cent in net ton-kilometres, that in Asia increased by more than 200 per cent. Motorized traffic in terms of number of vehicles increased by about 180 per cent in Asia, as compared with less than 90 per cent for the world as a whole. In both respects, chiefly because of the low level of activity immediately after the war, Asia expanded faster than any other part of the world.[4]

Table 1

Annual Rates of Increase in Gross Domestic Product, Population and Land Traffic, 1948-1957

Country[a]	*GDP at constant prices*	*Population*	*Rail & Road traffic in ton-km*	*Rail & Road traffic in passenger km*
Thailand	4.38	1.89	19.88	24.13
Viet-Nam, southern . . .		. . .	13.25	13.26
China: Taiwan	6.26[b]	4.04	11.87	11.33
Cambodia	3.68[b]	2.30	11.60	19.59
Indonesia		1.61	11.31	10.10
Korea, southern	2.62[c]	1.29	9.25	9.23
Federation of Malaya . .	1.57[d]	2.60	8.59	12.75
Japan	8.59	1.50	8.50	5.36
India	2.53[e]	1.30	8.07	4.50
Ceylon	3.21[f]	2.65	7.29	3.10
Pakistan	2.21[e g]	1.54	6.50	4.34
Philippines	5.20[g]	2.22	6.45	10.97
Burma	3.48	1.13	0.25	10.27

Sources: Data on gross domestic product are based on Asian Economic Statistics published in ECAFE annual *Economic Survey* (1955 and 1959). Population statistics are derived from the United Nations, *Demographic Yearbook* 1958. Traffic figures are based on *infra*, Table 2.

Notes: [a] Countries are arranged in a descending order of the rate of growth of rail and road traffic in ton-km.
[b] 1951-57
[c] 1953-57
[d] 1949-1953
[e] Net national product
[f] 1950-57
[g] 1949-1957

Pattern of traffic

Owning to lack of statistics, it has not been possible to give a complete picture of the pattern of traffic in countries of the ECAFE region. Table 2 contains some freight and passenger traffic figures for railways, roads and waterways for 1938, 1948 and 1957. Except for railways, basic statistics are not available, and estimates have to be made which represent nothing more than rough order of magnitude. Account has not been duly taken of traffic carried by inland and coastwise shipping in certain countries, whereas it has been necessary to omit non-motorized transport by human porterage or draught animal[5] as well as air transport (which is of great significance in several countries, notably in the land-locked countries).

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[2] Out of a total of 26.7 million passengers carried by rail in Burma in 1957/58, the Rangoon suburban traffic accounted for 12.1 million persons. In Japan, the number of commuters by train rose from 2.9 billion in 1949 to 4.7 billion in 1957.

[3] The recent increase in motor vehicles in those cities which are already overcrowded has brought about congestion in road traffic. In Japan, as in other highly industrialized countries where road transport is much more developed, the influence of the automobile age has already set in motion the tendency towards decentralization. The development of suburban areas or satellite cities is now under way, and similarly, large-scale industries tend to move away from overcrowded towns into less congested areas.

[4] Based on data published in United Nations, *Statistical Yearbook*, 1958, pp. 295, 301-308.

In spite of these limitations, the figures in table 2 do indicate some significant changes of the transport pattern in countries of the region during the postwar period. The most noticeable change has been the rapid increase in motorized transport as compared with railway transport. So far as freight is concerned, road traffic in 1957 as compared with 1938 increased by more than ten times in Cambodia, India and southern Viet-Nam; by 5-7 times in the Federation of Malaya, Indonesia, Japan, and Thailand; by 3-4 times in China: Taiwan, Ceylon and the Philippines; by one time in southern Korea and Pakistan (compared with 1948); and by less than one half time in Burma. On the other hand, in none of these countries has railway freight traffic increased by more than 150 per cent. In mainland China, however, railway freight traffic rose by more than 6 times during 1949-1957, while road traffic presumably registered a much smaller increase during the same period.

Before the war,[6] railways appeared to have been the basic means of transportation for freight in all these countries, except in the Philippines—hauling from 60 per cent of the combined rail and road traffic in Ceylon to more than 99 per cent of the total in India. The share of railways in over-all transport volume (including waterways) should be much smaller in those countries where inland waterways are by far the most significant mode of transportation, e.g., Cambodia and Viet-Nam. During the postwar period, as a result of the comparatively rapid rate of road transport development, the share of railways in freight traffic has been invariably reduced, and correspondingly that of the roads has increased for all those countries listed in table 2 where such figures are available. The reduction of the railways' share was, however, rather slight in the cases of India and China: Taiwan and presumably also China: mainland, Pakistan and southern Korea. In these countries, domestic freight traffic was still heavily dependent on railways whose share in the combined rail and road traffic in 1957 (1952 for China: mainland) was about 80 per cent or more. The postwar increase of railway freight traffic in these countries has also been much greater than the other countries (except Japan and Thailand). The rail-oriented transport system of these countries is due to the deliberate and constant policy of their governments in prewar days to invest heavily in railways.

The Philippines represents an extreme case of the opposite position where, before the war, railway freight traffic was only a little more than one-third of the combined rail and road freight—the lowest share among ECAFE countries. In the postwar period, while the rail freight traffic increased only slightly, road freight traffic in 1957 was five times that in 1938, and correspondingly the share of railway freight traffic was reduced to only 11 per cent in 1957. Next to the Philippines are Ceylon and the Federation of Malaya, where in 1957 the relative importance of the railway and road freight traffic is exactly the reverse of that in 1938: the share of freight traffic by road in 1957 in both countries was about 70 per cent in 1957. In Burma, Cambodia, Indonesia and southern Viet-Nam, while freight traffic carried by road also increased rapidly, it appears that waterways continued to absorb the lion's share of the total freight traffic.

The pattern of passenger traffic also showed a similar change during the postwar period, although it was not so pronounced as in the case of freight traffic. Except in Indonesia and Japan, passenger traffic by means of automotive vehicles, particularly by bus, has increased faster than by railway. The increase in road passenger traffic in 1957 over 1938 was by about 18 times in Thailand; by 5-7 times in southern Korea (compared with 1948), the Philippines, and China: Taiwan (compared with 1948); by 4 times in Cambodia, Ceylon and southern Viet-Nam; by 200 per cent in Burma, the Federation of Malaya, India (compared with 1948) and Japan; and by a hundred per cent in Indonesia and Pakistan (compared with 1948). The distribution of the increases was more even than in the case of road freight traffic. On the other hand, railway passenger traffic actually decreased in the Federation of Malaya, increased by less than 100 per cent in Pakistan, southern Korea, Burma, the Philippines and Ceylon; by between 100 and 200 per cent in Cambodia, India, Indonesia and Iran; by a little more than 200 per cent in Japan; by about 3 times in China: Taiwan and by a little less than 6 times in Thailand. As a result of the different rates of growth of road as against rail passenger traffic, the share of road transport increased (except in Japan and Indonesia) and reached more than 90 per cent of the combined rail and road passenger traffic in the Philippines and Cambodia, more than 80 per cent in southern Viet-Nam, Iran, Burma, the Federation of Malaya, Thailand, and Ceylon.

The present position of transport facilities

Despite the rapid reconstruction and development in the postwar period, modern transport facilities in the ECAFE region which has a rather low level of income, are very limited. In 1957, there were 4.5 kilometres of railway tracks for every 10,000 persons for the world as a whole, while in Asia, the figure was about one kilometre. Although Asian countries have more than half of the world's population, they contained only a little more than 2 per cent of the world's motor vehicles in 1957.[7]

Variations in the availability of the various transport means and in the per capita traffic amongst the countries of the region are very great. They are conditioned largely by the stages of development, the size of the country in terms of area or population, the geographical and topographical characteristics, the extent of urbanization, the pattern of goods traffic, etc. Thus Japan, which in the region occupies a unique position

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[5] For example, the estimated ten million agricultural carts in India—assuming an average 250 kg of load and travel of 2,000 km per annum per cart—may carry a goods traffic of about the same volume as motor-vehicles.

[6] During the Second World War, the distribution of traffic among the various means of transport did not change radically, although the railways probably played an even more predominant part in inland transport.

[7] United Nations, *Statistical Yearbook, 1958.*

Table 2

FREIGHT AND PASSENGER TRAFFIC IN CERTAIN ECAFE COUNTRIES

Countries	Year	Freight traffic (in million ton - kilometres)										Passenger traffic (million passenger kilometres)				
		Rail	Road	Water transport	Total rail & road (3 + 4)	Of which percentage share of		Total Rail, road & water transport	Of which percentage share of			Rail	Road	Total rail & road traffic (13 + 14)	Percentage share by	
						Rail	Road		Rail	Road	Waterways				Rail	Road
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Japan	1938	21,946	1,768	60,000[a b]	123,714	92.5	7.5	83,714	26.2	2.1	71.7	40,056	15,586	55,642	72.0	28.0
	1948	26,867	3,237	24,000[a]	30,104	89.2	10.8	54,104	49.7	6.0	44.4	103,651	8,646	112,297	92.3	7.7
	1957	48,991	13,724	41,000	62,715	78.1	21.9	103,715	47.2	13.2	39.5	132,089	47,606	179,695	73.5	26.5
India	1938	36,234	312		36,546	99.1	0.9					30,164				
	1948	37,200	1,576		38,776	95.9	4.1					62,470	17,698	80,168	77.9	22.1
	1957	73,415	4,550	5,950	77,965	94.2	5.8	83,915	87.5	5.4	7.1	69,738	49,450	119,188	58.5	41.5
China: Taiwan	1938	847	39		886	95.6	4.4					827				
	1948	691	68		759	91.0	9.0					1,881	512	2,393	78.6	21.4
	1957	1,908	175		2,083	91.6	8.4					3,451	2,836	6,287	54.9	45.1
China: Mainland* . . .	1952	59,461	255	3,961	59,716	99.6	0.4	63,677	93.4	0.4	6.2					
	1957	134,600														
Pakistan	1938															
	1948	3,824	216		4,040	94.7	5.3					9,943	3,858	13,801	72.0	28.0
	1957	6,684	438	4,960	7,122	93.9	6.1	12,082	55.3	3.6	41.1	11,273	8,955	20,228	55.7	44.3
Korea, southern	1938[c]	3,356	...		...							3,047				
	1948	1,041	242		1,283	81.1	18.9					2,829	480	3,309	85.5	14.5
	1957	2,364	480		2,844	83.1	16.9					3,435	3,890	7,325	46.9	53.1
Iran	1938											...				
	1948	761[d]			...							324[d]				
	1957	1,497	686		2,183	68.6	31.4					860	6,940[e]	7,800	11.0	89.0
Thailand	1938	453	114		567	79.9	20.1					294	582	876	33.6	66.4
	1948	301	52		353	85.3	14.7					1,307	486	1,793	72.9	27.1
	1957	1,025	780	500	1,805	56.8	43.2	2,305	44.5	33.8	21.7	1,973	10,572	12,545	15.7	84.3
Burma	1938	1,141	278		1,419	80.4	19.6					703	2,118	2,821	24.9	75.1
	1948	626	361		987	63.4	36.6					484	2,678	3,162	15.3	84.7
	1957	621	388	1,400	1,009	61.5	38.5	2,409	25.8	16.1	58.1	946	6,677	7,623	12.4	87.6
Indonesia	1938	906	252		1,158	78.2	21.8					1,689	5,382	7,071	23.9	76.1
	1948	434[d]	562		996	43.6	56.4					1,532[d]	4,912	6,444	23.8	76.2
	1957	1,044	1,568	3,491	2,612	40.0	60.0	6,103	17.1	25.7	57.2	4,739	10,574	15,313	30.9	69.1
Federation of Malaya . .	1938	262[f]	133		395	66.3	33.7					960[g]	1,310	2,270	42.3	57.7
	1948	316[f]	372		688	45.9	54.1					317[g]	1,296	1,613	19.7	80.3
	1957	436[f]	1,008		1,444	30.2	69.8					624	4,126	4,750	13.1	86.9
Ceylon	1938	216[h a]	140		356	60.7	39.3					891[g]	1,320	2,211	40.3	59.7
	1948	256[a]	252		508	50.4	49.6					4,001[g]	2,232	6,233	64.2	35.8
	1957	295	662		957	30.8	69.2					1,527	6,678	8,205	18.6	81.4
Philippines	1938	162	309		471	34.4	65.8					433	4,448	4,881	8.9	91.1
	1948	125	871		996	12.6	87.4					287	11,432	11,719	2.4	97.6
	1957	190	1,558	300	1,748	10.9	89.1	2,048	9.3	78.1	14.6	588	29,317	29,905	2.0	98.0
Viet-Nam, southern . . .	1938	283[i]	23		306	92.5	7.5					850[i]	692	1,542	55.1	44.9
	1948	53[i]	88		141	37.6	62.4					49[i]	1,306	1,355	3.6	96.4
	1957	82	350	1,210	432	25.7	74.3	1,642	5.0	21.3	73.7	439	3,715	4,154	10.6	89.4
Cambodia	1938	52	11		63	82.5	17.5					34	264	298	11.4	88.6
	1948	48[d]	22		70	68.6	31.4					44[d]	234	278	15.8	84.2
	1957	62	126	400	188	33.0	67.0	588	10.5	21.4	68.0	81	1,217	1,298	6.2	93.8

Source: (I) Railway traffic data are from United Nations, *Statistical* Yearbook, 1958 and 1959, supplemented by annual reports of national railways boards and national statistical yearbooks.

(*Continued on next page*)

(II) Road traffic are estimated by multiplying the following assumed annual performance to the numbers of registered by types:

Year	Type of vehicle	Capacity		Rate of performance	Average annual distance travelled	Annual performance
1957	Bus	30	pass.	0.80	40,000 km	960,000 pass-km
	Pass. cars	5	„	0.40	12,500 „	25,000 „
	Truck	3½	tons	0.50	20,000 „	35,000 ton-km
1948 & 1938	Bus	25	pass.	0.80	30,000 „	600,000 pass-km
	Pass. cars	5	„	0.40	10,000 „	20,000 „
	Truck	2½	tons	0.50	15,000 „	26,000 ton-km

(III) Except in the case of Japan, Indonesia and the Philippines, water transport refers to inland waterway traffic only, figures of which are worked out largely on the basis of the estimates of the number of vessels, inland countryboats, the average load factor and informed opinion regarding the average length and number of journeys performed annually. For Japan, Indonesia and the Philippines figures refer to interinsular freight traffic. In the case of Indonesia and the Philippines, estimates are made by multiplying actual tonnages carried by an average haul of 500 km for Indonesia and 200 km for the Philippines.

[a] Estimated according to the ratio of actual tonnages carried in 1938, 1948 and 1957.

[b] 1937. [c] All Korea. [d] 1949. [e] 1956.

[f] Rail traffic includes Singapore.

[g] Estimated according to the ratio of actual number of passengers carried in 1938, 1948 and 1957.

[h] 1940/41. [i] All Viet-Nam.

[*] Traffic figures on Mainland China for 1951 and 1952 were derived from: Y.L. Wu, *An Economic Survey of Communist China,* Bookman Associates, New York, p.346.

as an industrialized country has already a well developed transport network. Railways, road transport and waterways have already performed highly specialized functions for short and long haulages of passengers and various kinds of commodities.[8] In 1957, the length of railway was 54.6 kilometres, and the number of motor vehicles 1,770 per thousand square kilometres (see table 3). These were the highest figures in countries of the region, as was that for Japan's per capita rail and road traffic in both freight and passengers.[9] The particularly high passenger traffic is, however, partly accounted for by the dense population.

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[8] In Japan, the percentage distribution of goods traffic in 1957 is as follows:

	Railways	*Waterways*	*Trucks*
Agricultural products	7.1	0.6	9.3
Fuel	31.1	54.9	9.1
Building materials	22.5	17.2	14.8
Mineral products	6.6	9.0	1.9
Industrial products and others . .	32.7	18.2	65.9
TOTAL	100.0	100.0	100.0

Source: *Economic Survey of Japan, 1957.*

[9] The relatively high figures for passenger traffic as compared with freight traffic in many countries listed in the table should be weighted heavily by urban traffic carried by motorized transport, which accounts for a significant part of passenger traffic. Unfortunately, for want of data, the distinction between urban and non-urban traffic could not be drawn statistically.

Table 3
INDICATORS OF LEVEL OF LAND TRANSPORT, 1957

Country[a]	*Per capita rail & road freight traffic in ton-km*	*Per capita rail & road passenger traffic in passenger km*	*Length of railroad in km per 1,000 sq km*	*Length of railroad in km per 10,000 population*	*Number of motor vehicles per 1,000 sq km*	*Number of motor vehicles per 10,000 population*	*Per capita income in US$*[b]
Japan	690	1,977	54.6	2.22	1,770	72.0	260
China: Taiwan	219	661	26.4	1.00	381	14.4	130
India	199	304	15.6	1.29	130	10.8	60[c]
Federation of Malaya . .	187	615	15.9	3.33	793	165.8	250[d][e]
Korea, southern	127	328	30.3	1.32	281	12.2	150
Iran	114	406	1.6	1.34	40	33.9	. . .
Ceylon	104	895	22.0	1.58	1,338	95.8	120
Thailand	86	595	6.8	1.65	124	30.2	90[c]
Pakistan	84	240	12.0	1.34	56	6.2	50[f]
Philippines	75	1,282	3.2	0.41	480	61.7	190
Surma	50	380	4.3	1.46	52	17.5	50
Viet-Nam, southern . . .	35	338	7.4	1.03	252	35.0	140[c]
Indonesia	31	180	4.4	0.78	85	15.0	54[g]
U.S.A.	7,691	6,450	45.0	20.59	8,576	3,922	2,100
France	1,701	2,528	71.8	8.99	9,694	1,212	856
UK	1,399	4,208	125.1	5.93	22,545	1,070	960
Germany, Federal Republic of	1,361	4,372	122.8	5.91	13,461	649	767

Sources: For ECAFE countries, traffic figures are derived from table 2, total length of railroad from the *Economic Survey of Asia and the Far East 1958,* number of motor vehicles per area and population statistics from United Nations, *Statistical Yearbook, 1958.*

For European countries, figures are derived from data published in United Nations, *Annual Bulletin of Transport Statistics for Europe, 1958,* supplemented by United Nations, *Statistical Yearbook, 1958.*

For the United States, figures are derived from data published in U.S. Department of Commerce, *Statistical Abstract for the United States, 1959,* supplemented by United Nations, *Statistical Yearbook, 1958.*

[a] Countries are arranged in descending order of the per capita rail and road freight traffic in ton-km.

[b] For ECAFE and European countries, the estimates of per capita incomes are based on national income figures in local currencies, respectively published in the *Economic Survey of Asia and the Far East, 1958* and the United Nations, *Yearbook of National Account Statistics, 1958.* These figures are converted into US$ by means of exchange rates published by the International Monetary Fund, except for southern Korea where the rate published in the *Economic Survey of Asia and the Far East, 1958* is used.

[c] 1956. [d] including Singapore. [e] 1953. [f] at 1952-56 prices. [g] 1951.

Levels of transport facilities and traffic for the rest of the ECAFE countries are markedly lower than in Japan and much lower than the more advanced European countries and the United States. Of these countries, Ceylon and the Federation of Malaya appear to have a more developed transport system than the others. In fact, the number of motor vehicles per 10,000 inhabitants in both countries in 1957 was even higher than that in Japan, although per unit of area it was lower. The length of railway per 1,000 square kilometres in 1957 in both countries was exceeded only by Japan and southern Korea. However, the per capita road traffic of these two countries, especially of Ceylon, was not among the highest.

Railways were the major means of transport in India, China (Taiwan and mainland), southern Korea and Pakistan, and, to a lesser extent, Thailand, in terms of length of railways per 10,000 population. The length or railtracks per unit area in these countries is next only to those of Japan, Ceylon and the Federation of Malaya. On the other hand, the number of motor vehicles per 10,000 inhabitants in these countries was very low. Their relatively high level of freight traffic (with the exception of Pakistan) was largely carried by railways. As mentioned above, the existing railways networks in these countries have been chiefly a result of historical development—the railways were built long before the development of road transport. In large countries such as India and mainland China, area, resources, industry and the commodity traffic patterns make rail transport more economical for long hauls of heavy goods—coal, agricultural products and building materials. In India in 1956/57, these three kinds of goods accounted for about 44 per cent of the total freight traffic carried by railways.[10]

In contrast to this group of railway-oriented countries, the Philippines has very limited railway facilities, but a comparatively developed road transport system similar to that in Ceylon and the Federation of Malaya. The number of motor vehicles in 1957 was about 62 per 10,000 population, thus putting the Philippines next only to the Federation of Malaya, Ceylon and Japan. In terms of number of vehicles to population and land area, southern Viet-Nam and Thailand also appear to be in a better position than the rest of the countries of the region.

All these countries — Ceylon, the Federation of Malaya, the Philippines, southern Viet-Nam and Thailand — are small in size, and require in the main short hauls generally conducive to the development of road transport. Also, since there are practically no heavy industries, the commodity pattern is also suited to road transport. The construction of railways in these countries (as well as in Burma, Indonesia and some other countries of the region) was originally determined largely by the needs of foreign trade (especially the export of raw materials and food stuffs) more so than by the requirement of the small domestic market. The deliberate economic and transport development pursued after the war has apparently modified the transport pattern. The development of road transport has particularly facilitated the development of the domestic market which in turn has increased the demand for road transport. Even some export commodities which were formerly shipped by railways are now profitably shipped by trucks. For instance, in Malaya, rubber and tin accounted for about 24 per cent of the total goods traffic carried by railways in 1948; this share has been reduced to 16 per cent in 1957.[11] Similarly, the share of sugar and sugar products in the Philippines has been reduced from 46 per cent before the war to 34 per cent in 1957.[12] For the category of "miscellaneous goods", especially manufactured light consumer goods, which are largely composed of small lots of cargo, the declining share for railways is especially noticeable. Most annual reports of national railways observe that, in this particular category of commodities, truck transportation has been encroaching upon railways year after year. However, in general, in all ECAFE countries, not all intercity or interregional motor traffic can properly be regarded as a diversion from rail transportation, since all transportation cannot be provided by the railways in any event, either because such traffic is created by motor vehicles or because it is in areas not served by the railways. Thus truck haulers are even engaged to a larger extent than railways in freight movement in these countries than in countries having a well developed transport system.

The low level of land transport facilities and traffic in Burma, Indonesia and southern Viet-Nam (and possibly also Cambodia and North Borneo) may be explained in part by the availability of transport on navigable rivers and canals, and, in the case of Indonesia, by coastal and inter-insular shipping. In Cambodia and southern Viet-Nam, as in Thailand, canals and rivers convey the bulk of paddy from the producing areas to the mills, and most general cargo to and for the people living along the waterways. However, in the course of time, the development of road transport may take over a part of waterway transport at least in regard to general cargo.

Afghanistan, Laos and Nepal, unlike other countries of the region, are landlocked. Economic development is still in its early stages. The population is sparse, and modern means of transportation to a large extent are lacking.

Transport in economic development plans

THE PHASE OF REHABILITATION

Thirteen countries of the region have development plans, most of them covering a five-year period and beginning in 1956 or 1957. Some of the plans, like those of Afghanistan, Ceylon, Iran, Pakistan and the

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[10] *India Railways Administration Report, 1956/57.*

[11] Malayan Railway Administration *Annual Report*, 1948 and 1957.

[12] *Report of the Manila Railroad Company, 1940/41* and *Statistical Bulletin*, June 1958.

Philippines, were preceded by a five-to-seven-year plan or programme, most of which may be regarded as rehabilitation programmes. Transport rehabilitation and improvement was one of the principal targets of those earlier programmes. In India's first five-year plan (1951/52-1955/56), it was specifically mentioned that the principal task in the field of transport was to rehabilitate to the extent possible the assets which during the preceding decade had been subjected to an unprecedented strain. The task was particularly heavy in the case of railways which absorbed more than 53 per cent of total public expenditures allocated for the transport sector. The latter accounted for more than 26 per cent of total public outlays in the first plan. In Burma, about 20 per cent of the government budget was spent on transport and communications during 1947/48-1950/51, as compared to about 9 per cent in 1938/39. Similar heavy expenditures on transport were incurred by many other countries during the rehabilitation phase immediately after the war. Primary attention was paid to the early rehabilitation of railways which gave a marked stimulus to the quick revival of external trade. Moreover, outside financial assistance was more readily available to the railway sector.

OUTLAYS FOR TRANSPORT DEVELOPMENT IN CURRENT PLANS

Table 4 presents a general picture in each of thirteen countries of the region, of the different sectors in which investment is to be undertaken under current plans. Expenditures on transport and communications, mostly in the government sector, are emphasized in the development plans of Burma, Cambodia, the Federation of Malaya, India, Indonesia, Iran, Nepal, Thailand and southern Viet-Nam, which earmark 22-34 per cent of total development expenditure for transport during the plan period. Only Afghanistan, Ceylon, China: Taiwan, Pakistan and the Philippines have put less stress on transport and communications, the range of transport development expenditures in these countries being 12-18 per cent.[13]

In a number of countries where high priority is given to transport, a significant part of investment is directed towards improving the quality and efficiency of existing facilities. An outstanding development in rail transport has been a marked shift towards the use of diesel operated locomotives.[14] In Thailand, for example, steam traction is to be dropped within the next few years. The number of such locomotives in service has already been declining since 1951/52, and almost no more new steam locomotives are to be purchased.

From the point of view of both the magnitude of investment and targets set, the railway development plans of India and mainland China lead the rest of the ECAFE countries combined. In the Second Plan, the railway for India includes the doubling of 2,586 kilometres of track, the electrification of sections totalling 1,329 kilometres, and the dieselization of 1,936 kilometres, as well as the construction of 1,355 kilometres of new lines, the renewal of 12,875 kilometres of obsolete track, and the procurement of 2,258 locomotives, 107,247 wagons and 11,364 coaches. There is also to be a large expansion in workshop facilities. Railway development planning in mainland China is on an even more ambitious scale. Mainland China's second five-year plan proposes to build 8,000-9,000 kilometres during 1958-1962 as compared with 4,920 kilometres reportedly built during the first plan period.

DISTRIBUTION OF PLANNED EXPENDITURES FOR TRANSPORT

The importance of the several modes of transport in the plans may be indicated by the distribution of the outlays for transport (see table 5).

In Ceylon, Japan, the Federation of Malaya and the Philippines—classified earlier as motorized countries—planned development expenditures on the road sector represent respectively 57, 51, 39 and 49 per cent. In the landlocked countries—Afghanistan, Laos and Nepal—in particular, the development of communications with the neighbouring countries is also contemplated in the current plans, for which again emphasis is laid on road transport. The high proportion of expenditures on road and road transport in China: Taiwan, Indonesia, Iran and Thailand will contribute to a subsequently higher rate of growth of their road traffic, as compared with rail traffic.

In India, Pakistan and mainland China, however, where railway transport is predominant, planned expenditures for transport will largely be allocated to railways. The reason is partly, of course, the magnitude and importance of the existing rail systems and their investment needs, and partly the growing demands resulting from the relatively large increase expected in the flow of such commodities as coal, cement, and fertilizers. Raw materials for heavy industries will assume a prominent position in the development programmes of mainland China and India in particular.

In East Pakistan in contrast to West Pakistan, road and inland waterways transport combined claimed a relatively higher proportion of planned outlays than railways, because of the difference of geography and climate in these two areas. A relatively significant proportion of expenditures will also be allocated to waterways, harbours, shipping etc., in Ceylon, China: Taiwan, the Federation of Malaya, Indonesia and the Philippines. In these countries, international trade and coastal transport play an important role in the economy.

In practically all countries, air transport is still in its early stage of development, and planned outlays for this particular form of transport are relatively low, ranging from 2.7 per cent in Ceylon to 9 per cent in Pakistan.

PROJECTED RATE OF GROWTH OF TRAFFIC

Planning for transport calls for estimates of the rate of growth in freight and passenger traffic, but only four countries, i.e. China: Taiwan, India, Japan and Pakistan, include information on the expected growth in traffic in their plans.

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[13] Experience in other countries has shown that investment in transport is a fairly constant proportion of total investment amounting to 20-25 per cent. (See J. Tinbergen, *Design of Development,* John Hopkins Press, Baltimore, USA, p.31).

[14] This shift is designed not only to find alternative motive power where coal is deficient, but also to speed up and increase the tracking capacity of railways.

Table 4.

PLANNED DEVELOPMENT EXPENDITURES BY PRODUCTION SECTORS IN CERTAIN ECAFE COUNTRIES

Plan and Plan Period			*Transport & Communication*	*Total Development Expenditure*	*Transport & Communication*	*Water & Power*	*Mining & Industries*	*Agriculture*	*Others*	*Remarks*
			in million national currency		*In percentages*					
Afghanistan	Second Five-Year Plan	1956/57-1960/61	1,625	10,062	16.1	5.2[a]	11.6	22.7	44.2	Public Expenditures
Burma		(1952/53-1955/56)	(426)	(1,709)	(24.9)	(10.8)[a]	(12.0)	(9.4)	(42.9)	Actual Public Expenditures
	Four-Year Implementation Programme	1956/57-1959/60	596	2,512	23.8	11.0[a]	12.2	17.3	64.3	Public Expenditures
Ceylon		(1957)	(117)	(700)	(16.7)	(7.3)	(7.9)	(27.4)	(40.7)	Actual Investment Total
	Ten-Year Plan	1959-1968	1,946	13,600	14.3	6.1	20.6	23.9	35.2	Public and Private Expenditures
China: Taiwan . . .	First Four-Year Plan	1953-1956	(1,318)	(12,644)	(10.4)	(13.6)	(23.3)	(24.7)	(28.0)	Actual Fixed Capital Formation
	Second Four-Year Plan	1957-1960	2,473	20,010	12.4	17.0	34.7	26.3	9.6	Public and Private Expenditures
Federation of Malaya .	Five-Year Capital Expenditure Plan	1956-1960	254.4	1,138.5	22.3	7.0[a]	1.5	20.0	49.2	Public Expenditures
India	First Five-Year Plan	1951/52-1955/56	(5,320)[b]	(20,130)[c]	(26)	(29)	(5)	(15)	(25)	Actual Public Expenditures
	Second Five-Year Plan	1956/57-1960/61	10,620[d]	36,600[e]	29	18	24	11	18	Public Expenditures (Revised plan figures)
Indonesia	First Five-Year Plan	1956-1960	3,125	12,500	25.0	15.4[a]	25.0	22.6	12.0	Public Expenditures
Iran	Second Seven-Year Plan	1956/57-1962/63	17,454	52,800	33	5[a]	15	26	21	Public Expenditures
Nepal	Five-Year Plan	1956/57-1960/61	111.5	330.0	33.7	9.0	7.2	28.9	20.9	Public Expenditures
Pakistan[f]	First Five-Year Plan	1956/57-1960/61	1,666	9,352	17.8	28.8	17.4	16.1	19.9	Public Expenditures (unadjusted)
	Second Five-Year Plan	1960/61-1965/66	2,880	19,000	15.2	17.8	21.9	17.6	27.5	Public and Private Expenditures
Philippines	Three Year Programme FY	1960-1962	532.3	3,678.0	14.5	6.7	27.5	11.3	40.0[g]	Public and Private Expenditures
Thailand[h]		1959-1963	6,480	22,870	28.4	12.5[a]	1.6	11.7	45.8	Public Expenditures
Viet-Nam, southern . .	Five-Year Plan	1957-1961	5,500[i]	17.500	31.4	13.1	9.1	17.1	29.1	Public Expenditures

Sources. National plans.

Note: Figures in brackets are non-plan figures from the following sources: Ceylon: *The Ten-Year Plan;* China(Taiwan): *Industry of Free China* (Jan. 1959); India. *Selected Plan Statistics.*

[a] Power only.

[b] Original plan provision Rs 4,985 million.

[c] Original plan provision Rs 20,687 million.

[d] Original plan provision Rs 13,850 million.

[e] Original plan provision Rs 48,000 million.

[f] The figures for the Second Five-Year Plan are based on the Outline, not on the final text of the Plan.

[g] About half of it respresents outlays for construction.

[h] Proposed by the International Bank for Reconstruction and Development Mission to Thailand in its report; *A Public Development Program for Thailand* (1960, the Johns Hopkins Press, Baltimore).

[i] Relating to public works.

Table 5.

Percentage Share in Planned Development Expenditures for Transport in Certain ECAFE Countries

	Plan Period	Railways	Road & Road Transport	Inland Waterways Shipping Harbours	Airways	Other	Total
Afghanistan	FY 1956-60	...	69.9[a]	...	...	30.1[b]	100
Ceylon	1959-68	16.8	57.0	20.7	2.7	2.8	100
China: Taiwan	1957-60	27.1	41.8	28.0	3.1[c]	...	100
Federation of Malaya	1956-60	30.9	38.8[a]	25.1	5.2	...	100
India	FY 1951-55	53.9	28.6	12.1	4.8	0.6	100
	FY 1956-60	70.5	17.4	8.3	3.4	0.4	100
Indonesia	1956-60	23.8	47.5[a]	24.8	3.9[c]	...	100
Iran	1956-62	26.5	51.1[a]	15.4	7.0[c]	...	100
Japan[d]	FY 1958-62	41.1	51.1[a]	7.8	...	...	100
Pakistan[e]:	FY 1956-60	48.0	27.1	19.4	5.5		100
	FY 1961-65	38.4	36.4	16.5	8.7		100
West Pakistan	FY 1961-65	42.3	38.3	10.8	8.6		100
East Pakistan	FY 1961-65	32.1	33.4	25.4	9.1		100
Philippines	FY 1961-63	8.5	49.2	34.2	8.1		100
Thailand[f]	1960-63	27.8	55.0[a]	6.5	4.7	6.0	100

Sources: National development plans.

[a] Excluding road transport.

[b] Including airports meteorology and communications.

[c] Aerodromes and facilities only.

[d] Owing to the different ways of computing figures, the text of the plan gives a range of investment targets for railways, road transport and waterways. The percentage figures are based on the minimum investment targets given in the plan.

[e] The figures for the Second Five-Year Plan are based on the Outline, published in January 1960. At the time of writing, the full text of the Plan was not available.

[f] Compiled from recommendations of the Mission of International Bank for Reconstruction and Development to Thailand in its report, *A Public Development Program for Thailand,* 1960, Johns Hopkins Press, Baltimore.

Table 6.

Annual Rate of Growth in Traffic[a] and Net National Product in Current Plans

(in percentages)

	Net National Product	Total Freight Traffic	Total Passenger Traffic	Railway Freight Traffic	Railway Passenger Traffic	Freight Traffic by Truck	Passenger Traffic by Bus & Automobile	Freight Traffic by Water Transport	Passenger Traffic by Airways
China:									
Taiwan	7.5	...	...	5.2	6.6	9.2	8.4	10.9	...
India	4.5	...	...	8.1[b]	2.8[c]	...	...	...	...
Japan	6.5[d]	3.9	5.3	3.2	3.6	9.9	11.0	3.2	22.2
Pakistan	3.7	...	...	7.7	3.7	...	2.3[e]	...	...

Sources: National development plans.

[a] Calculated in kilometres.

[b] In terms of tons to be carried.

[c] In terms of number of persons to be carried.

[d] Gross national product.

[e] In terms of units of buses and trucks.

Estimates of transport demand in Japan's new long-range economic plan, 1958-1962, show that the rate of growth in road and aviation traffic will exceed the rate of increase in the gross national product, whereas the growth rate of railways and shipping traffic is expected to be lower.[15]

In the other plans, though projections were made of the growth of traffic, no indication is available of how the estimates were arrived at. In China: Taiwan, road and maritime transportation are expected to grow faster than net national product. The rate of increase in traffic by railways, however, is expected to be lower than the rate of growth in the national product, and consequently also as compared with the growth in road and maritime traffic. In both China: Taiwan and Japan, the increase in passenger traffic by motorized transport is expected to be significantly higher than in railway passenger traffic.

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[15] The total volume of traffic at the end of the plan period was calculated on the basis of a linear correlation between the volume of traffic and gross national product during 1950-1956, as was the volume of traffic by the different means of transport.

In India's and Pakistan's second five-year plan, freight traffic by railways[16] was planned to grow more than proportionately to net national product. In both countries, however, passenger traffic was planned to increase at a slower rate than freight traffic.

In forecasting future transport by railways in Thailand, experts[17] indicated that it did not appear reasonable to expect a continuing growth of goods traffic by the figure of over 10 per cent that had occurred in the past seven to eight years. With the anticipated increase of gross national product of only 3-4 per cent in the foreseeable future, a gradually decreasing percentage rise was expected. An annual expansion in freight traffic by railways might be expected at the rate of 5-6 per cent during 1960-1964, 3-4 per cent during 1965-1969 and 0-2 per cent during 1970-1974.

Major economic problems of transport development

Before discussing the various aspects of planning transport development, the major problems involved in transport development in relation to economic development may be examined.

First, should transport be designed only to service the development in other production sectors of the economy already under way, or should it also promote economic development and thus preceed the development of the other production sectors? As the availability of resources for development is limited, in many countries the promotional role of transport in the plans is generally reduced to a minimum. This may have the advantage of avoiding too much investment in transport at the expense of other sectors. On the other hand, there may be cases where the natural resources pattern has a decisive influence on the location of industry, and where therefore new transport facilities of a promotional character have to be provided. Otherwise, resources would remain unutilized. The answer to this problem lies perhaps in the close co-ordination of the transport development programme with the development programmes of other sectors of the economy. Consideration has to be given to the concrete conditions of pattern and location of resources, industry, commodity traffic, etc. of each particular country in question. It is therefore questionable whether any objective criteria can be derived, "from above", for the share of transport investment in the total plan investment without referring to the detailed sectoral programmes.

Secondly, there is the problem of balancing the improvement of existing transport facilities and operating efficiency on the one hand and the construction of new transport facilities on the other. This question, while related to the first one, is not exactly the same, for the new transport facilities may be constructed to meet only the existing traffic, not for new development. In many countries of the region, rail systems still operate with inefficient steam locomotives, obsolescent rail and cars, and poorly conditioned tracks. Roads are often completely neglected after they have been built and the maintenance of motor vehicles equipment is also poor, with the result that the cost of tyres, fuel consumption, and other operating items is excessive, the speed and quality of transportation are adversely affected, the service life of the vehicle is shortened, and the demand for replacement parts is greatly increased. Although there are good natural waterways in many countries of the region, they are often allowed to deteriorate, so that only the most primitive craft may use them all the year round. Adequate aids to safe navigation are often lacking, and inland water and coastal vessels are frequently obsolete and uneconomical. It may well, therefore, be desirable for the planner first to assess the efficiency of the existing transport system and plan for the improvement of existing transport facilities,[18] and only then to turn his attention to the construction of additional transport lines.

Third, the relative emphasis on the various transport means, such as railway, road, and inland and coastwise shipping in the development plan is another important problem. In considering this problem, the planner would of course first take the existing transport system into consideration, for he is not designing transport development for a country which has no transport facilities at all. At the same time, he has to bear in mind the new technological development in transport as well as in the use of fuel, etc. As the existing transport facilities are largely old-fashioned, there is a problem of balancing the maintenance and improvement of the somewhat out-of-date transport facilities (on which investment has already been sunk) and the introduction and development of transport means along the most modern lines. As will be explained in detail in section III[19] each transport means has its own relative advantages and disadvantages, and has to be considered in connexion with the geographical conditions, length of hauls, commodity pattern of traffic, and so on of a given country.

Fourth, the rate and fare schedules of various transport means are a serious problem. In many cases, they appear not only to affect unfavourably the financing of transport development, but, perhaps even more serious, they encourage a questionable allocation of traffic and resources. This is especially the case with state-run transport such as railways. It often happens that, in the course of inflation, all rates of public utilities, including public transport, either remain unchanged or lag behind in upward adjustments for fear of aggravating inflation. However, how much can low rates help in this regard when effective demand or money income is increasing? Would this device, instead of alleviating inflation, reduce the government's ability to absorb purchasing power and furthermore encourage the unnecessary burden on the already limited transport facilities? Even if the rates remains low during inflation, should they be adjusted when inflation subsides? From the long run point of view, would the uneconomically low rates become an obstacle to the improvement of services, the provision of adequate maintenance and the expansion of existing facilities? The effects of the rate structure of various transport means on the allocation of traffic and resources are often overlooked. The extremely low rates of state-run railways, while increasing their own traffic burden, may reduce the traffic of inland waterways or coastwise shipping operated by private enterprises to such a low level that the latter are operating on an uneconomical scale. Consequently, direct regulatory measures are usually imposed to restrict certain types of traffic by certain transport means, and the whole traffic system is distorted and becomes cumbersome. It is very urgent and important that the rate structure of various transport means be thoroughly reviewed not just in isolation, but in relation to each other and to price levels in general.

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[16] In India's second plan, additional goods traffic to be handled was projected according to increases in the production targets of four classes of commodities i.e. coal, steel, and raw materials for steel plants, cement and others.

[17] Cf. *A Public Development Program for Thailand, ibid*, p. 125 and *A Comprehensive Evaluation of Thailand's Transportation System Requirements*, Transportation Consultants, Inc., Washington D.C., p.59.

[18] Of course, balance of payments considerations are also important. A coal producing country, e.g. India, may be reluctant to speed up dieselization in railways as it would then have to incur a large amount of foreign exchange expenditures.

[19] See *infra*, pp. 22ff.

Fifth, a healthy transport system depends also on efficient management. Absence of the administrative machinery necessary to get the job done limits accomplishment nearly everywhere. Port facilities are often fully adequate to handle the tonnage offered, yet shipping is subject to interminable delays because of poor management, or the persistence of one or two bottlenecks that could be easily removed. Lack of organization and demarcation of responsibilities for road construction and maintenance is another problem in the region. Few countries have established national transport ministries with the necessary power, personnel, and information to enable them to design and carry out desirable long-term programmes. This lacuna and other organizational defects discourage effective working relations among transport agencies. Most countries are not organized for the most expeditious movement of persons and goods through inter-agency co-operation, nor do they lay sufficient stress on the elimination of wasteful duplication of facilities and services. Only partial success has been achieved in establishing the necessary administrative links between transport and general economic policies.

In the light of the present position as regards transport facilities and these major problems, we can now proceed to discuss the three basic issues confronting the planner and the policy-maker: how to go about estimating a nation's transport requirements; how to select wisely from among the various methods of transport available; and how to finance the improvement and expansion of transport facilities.

II. ESTIMATING TRANSPORT REQUIREMENTS IN THE PROCESS OF ECONOMIC DEVELOPMENT[20]

In the role of transport and its relation to the process of economic development, two fundamental differences are apparent between the earlier industrialization of the west and the present situation in the ECAFE region. One is the new promise of science and technology, and the other the recently emerging concept of national planning. The development of national plans makes it possible to arrive at some measure of what these requirements are likely to be, and the variety of techniques offered by recent transport innovations makes it far easier to meet transport requirements. This combination of having a choice and also the means of consciously exercising that choice offers an unprecedented opportunity to achieve the mobility essential to development.

Estimating over-all transport requirements

In the process of economic growth, the need for transport increases continuously. As the economy produces more, a larger volume of materials must be brought together to provide the necessary ingredients, and larger quantities are distributed to consumers. The increase in volume may also be accompanied by an extension of the area from which materials are assembled, as well as the area in which the increased production is marketed. The number of goods exchanged will multiply with increasing specialization, and rising incomes will add to the variety of goods that will be demanded. In a word, increasing economic activity involves, and depends to a large extent on, increasing mobility.

Past experience provides some indication of how the volume of intercity freight movement will vary with changes in national income. At different stages of economic growth, transport may increase more quickly or slowly than national income. If past relationships between economic activity and transport are observed, and perhaps the experience of other countries taken into account, this information can be applied to projections of national income or product in order to arrive at a broad view of total transport demands in the future. For example, about four ton-miles of intercity freight must be moved for every dollar of gross national product in the United States. Applying this figure to an estimate of future national product indicates that freight transport in that country over the next two decades may double in volume. Obviously, national income depends on the availability of adequate transport, and projections of economic activity presuppose the necessary facilities for movement. The present ratio between transport and total economic activity in any country will not continue exactly the same, especially if the country is in the early stages of economic growth. In general, more services will be included in the gross national product as levels of income and output rise, the increase in transport services being, however, less than proportionate. It is also likely that further economic progress will be accompanied by further refinements in production, which will mean the creation of greater value per unit of transport. Nevertheless, in the earlier stages of growth, the increase in transport requirements may be at a higher rate than the rise in economic activity, since industrialization increases the volume of heavy materials movement, and specialization increases the radius of the market.

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[20] Revision of E/CN.11/DPWP. 6/L. 4, a paper prepared for the sixth session of the Working Party on Economic Development and Planning, by the ECAFE Secretariat.

These computations, although subject to a wide margin of error, can help in a general way in evaluating total transport requirements. In many newly developing countries, however, a reliable statistical basis to provide even this rough measurement of transport needs is often lacking. Neither gross national product nor transport data are complete or reliable, nor do they extend over a sufficient period of time. Moreover, transport statistics are generally limited to rail traffic. Motor and water transport statistics are either unavailable or incomplete. There is also a heavy volume of traffic that moves by other methods, for which no data are compiled—goods moving by camel and bullock cart, and on the heads and backs of human beings.

Where overall computations can be used, however, they can serve to indicate the general magnitude of the problem and to provide a check on more detailed estimates. These must be built from the ground up, project by project. The approach involves a knowledge of present transport conditions and traffic, as well as of future development activities, the location of these activities, probable sources of raw materials, and the anticipated destinations of final products. It is this kind of detail, found in various stages of completeness in national planning, that provides a basis for locating and evaluating specific transport requirements and establishing what needs must be met.

There are no ready-made mathematical formulae that can be used to determine how much transport investment is required to meet transport needs, irrespective of particular conditions prevailing in a country. Obviously, where there is a backlog of needs, not all of them can be met in a given year. But, for each country, a trend can be established, and comparisons made with other countries with similar conditions; these serve as guides in the preparation of a practical annual programme. After that, the problem remains one of arriving at the specific location and character of the transport capacity needed, and of translating these needs into projects.

Mapping the transport plan

The determination of specific physical and financial requirements calls for the preparation of a national transport plan geared to the economic and social goals envisaged for the economy. It is necessary to know what kinds of goods will be moving, in what quantity, and over what routes. Existing transport capacity on these routes will have to be known in order to determine whether additional capacity will be required. Where further capacity is indicated, the next question is whether existing facilities can be made to operate more efficiently, whether they need to be expanded by additional investment, or whether the impact of the estimated transport demands can be mitigated, for example, by reducing peak loads.

It is apparent, then, that estimates of future transport requirements must be based first on projections of future economic activity. It will be necessary, at least for the most important commodities transported, to locate new sources of traffic for economic expansion. The mapping of these sources must take account of the raw materials needed to sustain the increased activities, and the probable destinations of final outputs. From this information, traffic flow maps can be prepared showing anticipated traffic growth. It is important to note the probable flow of traffic in both directions, and to indicate when peak traffic may occur, and how high the peaks may be.

In order to measure available capacity, we must relate this information to the physical condition of existing transport facilities and to the traffic now carried. Traffic counts need to be taken on roads and waterways, in order to find out the number and kinds of vehicles that are moving over what routes, in what direction, and with what amounts and kinds of goods. Knowledge of the quantities and kinds of materials and products now moving and to be transported in the future, plus information on the distances over which they are to be carried, will help to indicate the preferred methods of moving them. Preferences will be influenced in turn by the kinds of facilities already built and by the relative cost of increasing present capacity through more efficient operations or expansion of plant and equipment.

It is futile to attempt to assess transport needs, therefore, without first making an inventory of existing facilities, including their condition and capacity. Such a physical survey needs to be supplemented by flow maps showing traffic for all forms of transport and for the ports. The census should provide a nationwide picture of the resources and the unused capacity available, and the main difficulties to be overcome. In most countries, a fairly good inventory is available for rail and air transport. For road and water transport, there is generally nothing approaching an adequate inventory.

A physical inventory of transport facilities and traffic movement should be supplemented by an assessment of the quality of transport facilities and services. This can be done by interviewing shippers and transport operators. Without this latter information, it may not be possible to determine the extent to which the transport system is adequate; figures of traffic carried do not reveal how long a shipment takes, how much spoilage and damage occur, or how much additional traffic is being withheld because of transport limitations.

The mapping of the present transport situation, therefore, is a prerequisite to the planning of a national transport system. Future volume will have to be estimated from the goals established for agriculture, industry, mineral output, health and education programmes, and other planned developments. Without a broad outline of how the economy is to grow, and of where and how much it is to grow, it is not possible to plan transport facilities to serve this growth.

The complexity of the task suggests the need for certain short cuts. For projections of traffic, it may be enough to analyse only a few principal commodities which account for a large share of total traffic. These may include such items as agricultural staples, fertilizers, coal, ore, cement, and any other commodity that bulks large in the traffic total. Other traffic may be estimated on the basis of past trends in relation to population or income, and thus provide a measure of the increase in traffic that may be general.

The two primary requirements, then, are a physical inventory of existing transport facilities and their use, and an overall development programme that indicate economic and social goals and the volume and character of economic activity to be anticipated. This combination should be used to evolve a basis for national transport planning to meet long-term requirements.

Examples of transport planning

This approach to transport planning seems to have been adopted by India in its second five-year plan (1956/57—1960/61), especially in working out transport requirements in respect of railways. During the last year of the first plan (1951/52—1955/56), the railway system was heavily overloaded, and the attempt to move the additional traffic occasioned by the planned expansion of industry and agriculture led to serious tie-ups and long delays. The attempt to avoid this situation in the Second Plan is worth noting.

This plan (1956/57-1960/61) aimed at a 25 per cent increase in national income. This involved substantial increases in food and other agricultural production, in the output of minerals and raw materials for industry, and in the establishment of basic services. Specific targets of the second plan included an increase in annual foodgrain production of about ten million tons, or 15 per cent. The output of jute, cotton, and sugar was to increase by 25 to 30 per cent. An additional 8.5 million hectares of land were to be brought under irrigation. The production of coal was to rise by more than 20 million tons, or 63 per cent, and iron ore by 8.0 million tons, or 191 per cent.

These targets, and the general increase in economic activity implied, meant that transport requirements for both freight and passengers would be greatly increased. Extra strain was thus placed on the railways, since they were already providing the country's principal transport services, and hence planning studies were focussed on projections of rail needs. Detailed projections were made of several major classes of commodities, and general economic trend data were used for the projection of all other traffic. The four principal freight movements projected in detail included foodgrains, steel production (including iron and steel manufactures), coal and cement. These four classes of traffic acocunted for the major proportion of all rail freight transport. For estimates of passenger travel, the Planning Commission used a combination of past trends and projections of population and national product.

Initial experience in India had revealed the difficulties of first setting production goals and then attempting to provide the necessary transport with the resources that remained. This practice had led to serious inadequacies in the transport system. As a result, a better balance between transport and other activities was sought by submitting various development proposals to the railways whose estimate of the additional transport capacity involved was then obtained. The Planning Commission reviewed these tentative goals in the light of the transport implications thereof, and revised the transport targets upwards, as far as possible, where necessary.

Good estimates of industrial and agricultural production and comparisons of these data with volumes of goods transported provide a basis for an estimate of the volume of goods which will have to be moved in the future. Obviously many commodities are consumed locally, and imports also have to be taken into account. For Indian railways, a comparison of the production of selected commodities and the volume moving by rail has been made for a series of years.

An analysis of the past trends in traffic in India clearly shows that most of the coal, coke, iron ore, paper products, manganese and iron and steel products enter into the transport system and are carried by the railways. On the other hand, declining proportion of such items as sugar, salt, raw cotton, cotton goods, jute manufactures, and oilseeds move by rail. In the case of foodgrains, the fact that only 12 out of 73 million tons move by rail is due partly to the consumption of these commodities on the spot, and partly to the use of trucks.

How do the Indian rail traffic increases compare with the increase in the national income during the first plan period? The first plan, extending from 1951/52 to 1955/56, achieved an 18 per cent increase in national income as against the 25 per cent originally projected. On the railways, passenger-miles declined from 41,000 million in 1950/51 to 38,800 million in 1955/56. The index of passenger travel, taking 1950/51 as 100, fell to 94 in 1955/56, then rose to 102 in 1956/57. Freight traffic, on the contrary, rose much more rapidly than national income, from 27,000 million ton-miles in 1950/51 to 36,400 million in 1955/56, an increase of about 35 per cent.[21] It was the resulting congestion that made it necessary to raise the proportion of rail investment to total investment in transport from 54 per cent in the first plan to 71 per cent in the second.[22]

In the second plan, aimed at a 25 per cent increase in national income, provision was made for an increase of 51 per cent in goods movement and 15 per cent in passenger movement. During the first three years of the plan, the actual increase in railway traffic from the 1955/56 level to 1958/59 was from 36,400 million ton-miles to 47,000 million, or about 28 per cent. Passenger traffic on the railways rose about 7 per cent.

Compared to India's industrial production, railway freight since 1950/51 has been expanding much more rapidly, while passenger travel on the railways has not kept pace with industrial production.

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[21] Government of India, Ministry of Railways, *A Review of the Performance of the Indian Government Railways During the Second Five Year Plan Period in the Background of the Prevailing Economic Conditions*, 1960, pp. 7 and 12.

[22] See *supra*, table 5, p. 11.

Table 7.

INDIA: INDICES OF INDUSTRIAL PRODUCTION AND RAILWAY TRANSPORT

Year	Industrial production	Railway transport	
		Ton-miles	Passenger-miles
1950-51	100	100	100
1955-56	122	135	94
1956-57	133	149	102
1957-58	137	169	105
1958-59	140	173	103
Per cent change, 1955-56 to 1958-59 . . .	+14	+28	+10

Because of the lack of road transport data, it is not possible to say how total transport compares with the industrial production index. The growing importance of motor transport, however, is indicated by the rise in vehicle registration. It was difficult to estimate motor transport requirements for the second plan, since the lack of previous road transport development provided a less certain basis for projection. Future demand was largely in the nature of traffic that would seek to move only after improved roads and motor vehicles were made available. But a roadbuilding programme was laid out on the basis of what was thought to be a feasible start toward the long-range objective of overcoming the almost complete lack of rural communications. The objective was to integrate the rural economy into a network that would gradually eliminate the isolation of the village and thus open it up to health and educational facilities.

The first major step toward developing such a system of highway transport was to establish a national plan for road improvement aimed at bringing every village in any develped area within five miles of a main road. In most cases, the goal was to provide a main road within two miles of every village.

The accomplishment of the broad targets of the initial Nagpur Plan has now led to a second road plan covering a period of twenty years. The objective of the new plan is to have every village in a developed area no more than four miles from a surfaced road. and not more than 1.5 miles away from some type of road.

The need for improved road transport in India is acute. Passenger service by rail, other than first class, is poor. Overcrowding is acute. There is often standing room only. Goods movement by rail is subject to long delays in booking and in transit, and heavy loss through pilferage. In many cases, shipments by rail take several weeks when trucks could make the trip in a few days. Yet there are many factors inhibiting road transport; they include inadequate roads and bridges, rigid load restrictions, inadequate supply of vehicles, multiplicity of taxes, absence of reciprocal agreements between states, lack of proper credit facilities, and fear of nationalization. The Motor Vehicle Act of 1939 appears to aim at restricting rather than developing road transport.[23]

The road transport needs of India may be judged by the fact that, with nearly 400 million people and 1.3 million square miles of area, the country has only 121,600 miles of surfaced roads. Another 195,000 miles of road are unsurfaced; thus about 60 per cent of existing mileage is inadequate for all-weather travel. Lack of bridges and low-capacity bridges further weaken the system. But the use of existing roads by motor vehicles is also limited. Although there are some 10 million animal-drawn vehicles, there are only 130,000 trucks. The figure of about one truck per mile of surfaced road compares with 5 to 10 trucks per mile in many other countries. The number of motor vehicles per 100,000 population is only 89 in India compared to 483 for the Philippines, and 903 for Ceylon.

As an example of the various difficulties which arise in planning transport development may be cited the experience of Pakistan during its first five-year plan. The plan originally aimed at achieving a 20 per cent increase in national income. This objective involved some fairly ambitious production goals for agriculture, water and power development, industrialization, minerals, housing and education. Industrial output, as a whole, was scheduled to increase 70 per cent, with large increases in the capacity for food processing, textiles, paper, chemicals, and cement. Ultimately, the plan was scaled down to a 12 per cent increase in national income owing to unexpected misfortunes from bad weather, an unanticipated reverse in foodgrain production, foreign exchange difficulties, and political instability.

In the first plan (1955/56-1959/60), 18 per cent of all public development expenditure was allocated to transport and communications. Approximately half the amount of public expenditure earmarked for transport was for the railways, and about one-quarter for roads.

Table 8.

PAKISTAN: PUBLIC TRANSPORT EXPENDITURES, 1955/56-1959/60

	Millions of Rupees	Per cent of Total
Ports	130	9.1
Shipping	63	4.4
Inland water transport . .	83	5.9
Railways	683	48.0
Roads	360	25.3
Road transport	25	1.8
Civil aviation	78	5.5
	1,422	100.0

Source: Government of Pakistan, *The First Five-Year Plan, 1955-60,* (Draft) Vol.II, May 1956, p.510.

The allocation of resources for transport development was not based on production plans. Actually, the railways—which are the principal transport medium in West Pakistan—had made no computations of future traffic on which to base an estimate of further investment needs. Such an effort was made only after the first plan period had begun. Meanwhile, the first plan allocation for transport was based on the need for replacement of worn out and obsolete equipment, the renewal of track, and other improvements in the operating efficiency of existing facilities.

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[23] Government of India, Ministry of Transport and Communications, "Report of the Road Transport Reorganization Committee, 1959", p.7.

During Pakistan's first five-year plan, passenger traffic on the North Western Railway increased from 4,400 million to 5,400 million passenger miles, an average of 4.5 per cent per year during the plan period. Ton-miles increased from 2,800 million to 3,800 million, an average of 6.5 per cent per year. These increases compared to an annual rise of about 2 per cent in national income. In East Pakistan, the volume of passenger travel rose 4 per cent per annum during the plan period, while freight increased 18 per cent per annum.

The serious transport congestion that developed seems to have been the product of two opposite sets of factors. First, not all the money allocated was spent. Investments which might have alleviated transport difficulties were not carried out as planned; as a result, the gap between transport capacity and traffic growth was widened. In East Pakistan, for example, no part of the inland water transport plan was accomplished because of organizational difficulties. This failure added to the burden on the railways. The plan also called for an adequate storage system for foodgrains, but no action was taken.

These omissions increased the load on the railways, but there were at least two countervailing factors that may have saved rail transport from collapsing under the burden. Most important was the fact that only half the proposed increase in national output was realized, thus reducing traffic volume. Secondly, the discovery of natural gas and the introduction of pipeline transport further relieved the strain on the railways. Two sixteen-inch pipes from the Sui fields in Baluchistan south to Karachi and north to Multan were delivering the equivalent of 250,000 tons of fuel oil in 1957.

Under the circumstances, it would be difficult to maintain that the allocation of 18 per cent of planned public expenditure for transport in Pakistan was either too large or too small. Transport proved to be seriously inadequate. But it is not possible to say whether the bottlenecks would have been avoided if the transport programme had been carried out as planned, or would have been intensified if the over-all planning goals had been achieved.

An analysis has been made of the probable increase in rail traffic that would have occurred in West Pakistan if the programmed expansion of economic activity under the first five-year plan had been achieved.[24] This study listed each of the commodity goals in the plan, determined probable origins and destinations, and estimated how much of the total would require transportation. This figure was then added to existing traffic in order to indicate movements in both directions on 1,800 miles of routes.

The resulting study showed that, under the assumed 20 per cent increase in national income, the railway system of West Pakistan would be called upon to carry 3,600 million ton-miles by 1960, a 28 per cent increase over 1955. This was somewhat more than the expansion indicated by past trends, and exceeded, of course, the percentage increase in national income as projected. The significance of the analysis was its attempt to provide data for specific routes. For it was shown that, with an assumed 20 per cent increase in national income, eight rail routes could be expected to have traffic increases of 100 to 278 per cent.

It should be possible, however, to apply a sampling technique that would permit simpler and less time-consuming estimates. In West Pakistan, traffic projections might be based on five items: cement, foodgrains, firewood, coal and coke for the public, and fuel and other stores for the railway itself. These five items account for 57 per cent of total tonnage moving. In East Pakistan, the study of jute, coal, and grain movements might furnish an adequate basis for the projection of transport requirements.

For the second five-year plan (1960/61-1964/65), a 20 per cent increase in national income is essential. Upward trends in transport volume will continue, but the rate of increase for passenger travel will be diminished. For 1965, passenger miles are expected to rise to 6,500 million, or 20 per cent more than in 1960, the same increase as in national income. But, in view of the continued expansion of agriculture and industry, freight traffic is expected to rise by 40 per cent over 1960 levels—twice the rate of increase assumed for national income.

In East Pakistan, the volume of freight increase by 1965 is expected to be 30 per cent above 1960; passenger traffic will continue to increase by 4 per cent per year.

Balancing transport and economic activity

The situation in India and Pakistan, where there have ben serious imbalances between transport supply and demand, is by no means unusual. Even under carefully planned economic development programmes, these conditions are difficult to avoid. In the Soviet Union, for example, the obstacles imposed by poor transport were demonstrated soon after the first five-year plan was under way. Because of the lack of transport, fuel oil accumulating in storage tanks threatened to shut down refining operations, while petroleum users, such as iron and steel works, were reduced to only a few days' fuel oil supply. In one year, as many as 2 million tons of grain awaited shipment, and enough timber remained unmoved to fill tens of thousands of freight cars. The traffic backlog became so great that the railroads were unable to carry the materials needed for their own operations. As a result of these difficulties, the proportion of railway investment to total investment had to be increased. Previously the proportion had declined, from 20 per cent in 1926 to a low of 11 per cent in 1933. The increase was then to 14 per cent in 1935 and 1936. This period was one of rapid expansion of total investment; thus, while the proportion of total investment devoted to the railways was about the same in 1929 and 1935, the actual amount invested in rails in 1935 was nearly five times as great as in 1929.[25]

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[24] Abdul Qadir, "An assessment of the traffic development on the North Western Railway", (1955-60), 6 April, 1957.

[25] Holland Hunter, *Soviet Transportation Policy*, Cambridge: Harvard University Press, 1957.

The growth of transport volumes in mainland China has also been more rapid than the capacity of the transport system. In the nine years from 1949-1958, the volume of freight carried by modern means of transport in tons increased about 10 times: railway transport 7 times; motor vehicle transport 30 times, and steamship and tugboat service 14 times. Great efforts were made to meet these traffic requirements. It is estimated that an additional 9,200 km of railway were built during this period; thus, the total rail network was approximately 31,190 km in 1958.[26] Road mileage increased from 80,768 km 1949 to 400,000 km in 1958 or by 5 times. The country's airlines increased from 11,000 km in 1950 to 33,000 km of routes in 1959.

Despite these efforts, the Departments of Communications and Transport and the relevant production construction departments did not make an accurate estimate of the great increase in transport requirements resulting from their plans, and failed to achieve a proper balance between transport and development. Some very large construction works and newly developed areas created sudden and urgent transport demands which had not been planned for in advance and which the transport departments were unable to meet. In under-developed areas, where all kinds of supplies and even water had to be carried long distances, means of transport were not given due consideration, with the result that "huge wastes were caused" and difficulties were experienced in accomplishing the work.[27]

Industrial production was up 28 per cent in 1956 over 1955, agricultural production rose 4.9 per cent, and capital investment was up 59 per cent. Capital construction materials accounted for 37 per cent of the total volume of highway transport. This rapid growth of industry and construction could not help but overload the highways. In 1956, mineral building materials moving by road showed a 40 per cent increase; grains moving by road increased by 10 per cent; and coal movements were 25 per cent greater than in 1955.

But, compared to 1955, the number of trucks increased by only 7.5 per cent, which was far below the 39 per cent increase in ton-kilometres. According to a rough estimate, there was a shortage of 17,000 trucks during 1956, but inability to obtain rolled steel and accessories meant that the required number of trailers could not be produced. Truck drivers and mechanics were in short supply, and many vehicles were out of commission awaiting repairs. There was also a sharp drop in animal-driven carts, of which there were 91,900 less (21 per cent) in 1956 than in 1955. Agricultural co-operatives were using many more draft animals and carts on the farms.

Undesirable effects on production and construction followed. In 1956, the shortage of road transport resulted in serious congestion of the railway stations in Peking, Tientsin, Lanchow, Harbin, Hantan, and Tsinan. More recently, construction projects had to be suspended until materials could be brought to the site. Coke could not be shipped, thus holding up operations in metallurgical plants. Supplies required for geological prospecting and workers' livelihood were in short supply because transport could not meet the demand.

"Dynamic" versus "passive" role of transport

From these attempts to estimate and provide for transport requirements, it will be seen that current transport planning generally takes better account of the need to provide transport capacity in order to make possible the goals set forth in development plans. But transport also plays the role of generating new development by providing access to natural resources, by extending markets, by attacking rural isolation, by promoting programmes of health and education, and by multiplying the effectiveness of scarce personnel through increased mobility. Demands for transport arising from such development are difficult to estimate, and plans in that respect tend to be vague and inaccurate.

The justification and timing of the transport developments needed to accommodate those two functions are quite different. In its first role, transport must be provided along with predetermined industrial, agricultural, power or other developments. But transport when planned to promote development must precede it and be justified on the basis of potential rather than existing demand. Obviously, transport projects of the first category can and do have economic by-products, but their principal purpose is to accommodate demands that already exist or can be assessed in advance.

Current development plans generally focus on that role of transport which has the object of making feasible the goals established for other sectors of the economy. This is particularly true in countries where transport systems already exist and where the damage done by wartime-deferred maintenance has made the top priority projects obvious. Efforts to use transport as a means of setting in motion new developments do not figure prominently in the plans of countries of the region.

Where rail transport is dominant, much of the investment in transport has been for rail modernization. The possibility of building new rail facilities to open up new territory is limited by the absence of sufficient traffic. The best prospects for the promotion of new development are through the greater accessibility provided by road or air transport rather than by water or rail. But justification of such projects is often difficult because the benefits are widely diffused and their realization slow and uncertain.

The fact remains that vast opportunities exist for opening up new territory and tapping new resources, even in the present state of exploration and knowledge. The aeroplane offers the means of bringing closer the economies of widely separated regions and of making possible an effective national administration. New forest roads facilitate the extraction of forest products from timber lands now inaccessible. Agricultural extension services could be effectively developed if adequate transport enabled staff to travel by air, motorcycle, jeep, or motor boat. New sources of food might be tapped if the areas concerned were linked with consuming areas.

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[26] State Statistical Bureau, *Ten Great Years,* Foreign Language Press, Peking, 1960, pp. 44, 146.

[27] *Kung Lu* (Highway), Issue No. 10, 16 October, 1957.

Although Turkey is outside the ECAFE region, its experience with road transport as a means of promoting economic growth is significant. As recently as 1946, thousands of tons of Turkish wheat and corn were being left on the ground to rot. It was estimated that 10 per cent of the wheat crop was damaged yearly for lack of transport, and there were often local shortages of grain owing to the inability of an obsolete transport system to move agricultural surpluses.[28]

During the twenty-five years before the Second World War, transport development was focussed on Turkey's railways at the expense of road transport. The railways had originally been laid out to serve strategic purposes and to link important heavy industries with consuming centres. The requirements of the farmer had been neglected. Now, the task was to overcome the barriers imposed by obsolete railways and to compensate for the neglect of road transport.

After the war, therefore, a nine-year programme for highway rehabilitation was begun, along with modernization of the railways. It was impossible, because of the absence of traffic, to design the state highway system on the basis of savings that would accrue to motor vehicle operators. Instead, the road system was laid out to serve centres of population and develop the maximum agricultural potential. Attention was also given to the possibility of mineral developments, and the importance of providing feeder services to the railways.

As a result of these efforts and a sharp increase in the amount of money spent on highways, the length of all-weather roads in Turkey was increased 95 per cent in five years. Average speeds on state highways rose by 50 per cent, average capacity of trucks increased 35 per cent, and the number of vehicles using the roads increased 190 per cent. Savings in fuel consumption can be measured by the fact that travel increased 321 per cent, while the consumption of motor fuel rose only 173 per cent. Tyre life for trucks increased 80 per cent and for passenger cars 100 per cent. Savings in motor vehicle operating costs resulted in a continued decline in freight rates and passenger fares. The Turkish Government, which is the largest buyer of cereals, reported that on 60 routes the ton-kilometre cost of transporting cereals declined 42 per cent.

Total savings in vehicle operating costs for the five-year period amounted to 318 million Turkish lira compared to road expenditures during that period of 287 million Turkish lira. Thus, not only were substantial economies effected but benefits accrued from the greater accessibility of the various regions of Turkey and the general stimulus to resource development that resulted from a nationwide improvement in transport.

Among the gains to the Turkish economy during the accelerated roadbuilding programme was a sharp increase in gross national product. Taking 1953 as 100, gross national product rose from 61 in 1950 to 148 in 1956. Per capita income for Turkish farmers rose by one-fifth between 1948 and 1952, in constant prices.[29] Furthermore, along with the increase in road transport, rail freight increased 50 per cent, and rail passenger traffic 25 per cent.[30]

The Turkish programme, then, involved quite a different problem in estimating transport requirements than either India or Pakistan. The difference was primarily that in Turkey the initial development of practically non-existent road transport was the objective, whereas in India and Pakistan transport requirements were concentrated on railway systems inherited from an earlier period. These facilities were already heavily burdened with traffic, and in urgent need of rehabilitation to keep traffic moving.

The two situations reflect in part the stages in economic development that were involved, as well as the types of transport systems in being and the relative availability of foreign capital. The Greek-Turkish aid programme made possible an all-out effort to establish road transport service. Without a bold and broad attack, the immediate and far-ranging effect of the undertaking would not have been achieved.

The foreign aid programme made it possible for Turkey, with one motor vehicle for every 208 persons in 1957,[31] to spend nearly as much per motor vehicle for road purposes as Switzerland, which had one vehicle for every twelve persons. This expenditure was made effective by focusing from the very beginning on the training of personnel in the operation and maintenance of equipment and in the mechanized maintenance of the roads to be built. A training shop for maintenance operators was established that could turn out 600 graduates per year, and foreign assistance was provided for the purchase of machinery and for training engineers. Major emphasis was also laid on the provision of a large mileage of low-cost all-weather roads for light traffic. A stabilized soil road did not qualify for asphalt surfacing until, calculated on the basis of operating cost data, traffic had reached 300 vehicles per day.

When transport is considered from the standpoint of the fresh possibilities which it opens up, requirements must be measured in terms of the economic desirability of the ends to be accomplished. Where an entirely new transport facility is to be built, the need has to be expressed in such terms as the amount of new land that can be made available for cultivation, the new mineral and forest products made accessible, and general social or political objectives the benefits from which cannot be expressed in terms of money. In evaluating such entirely new projects, the task of assessing and measuring these indirect benefits of the economic and social objectives served by the facility becomes extremely important.

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[28] Max W. Thornburg, *Turkey: An Economic Appraisal*, Twentieth Century Fund, New York, 1949.

[29] United Nations, *Summary of Recent Economic Developments in the Middle East, 1952-1953*, New York: 1954, p.101.

[30] United States Department of Commerce, *Basic Data on the Economy of Turkey*, World Trade Information Service, Part I, p.55-81.

[31] *Turkish Highways Statistical Bulletin, 1958.*

Reducing transport requirements

Since very heavy capital investment is required for transport development in an under-developed country, every effort should be made to minimize the requirements for transport services in order to reduce the gap between needs and resources. If maximum progress is to be made towards the provision of the necessary transport capacity, a nation should seek to reduce unnecessary demand for transport as well as to increase facilities.

There are several ways of attacking transport problems from the demand side. A reduction in requirements may be accomplished through industrial policies and urban planning. New industrial locations should be selected with due consideration of the effect of alternative sites on the assembly of raw materials and on the distribution of finished products. Often, too, the type of energy resources to be used may make a considerable difference in the volume of transport capacity to be furnished. The processing of products close to their source may also reduce transport requirements. And the avoidance of excessive urban concentration and of planless urban development can reduce capital requirements.

Another approach is through a more even distribution of traffic over time. The heavy peak loads typical of predominantly agricultural economies may be avoided, for example, by the provision of adequate storage facilities. The canning, drying, freezing, or preservation, by other means, of food crops can also even out the flow of traffic and consequently reduce the capacity needed.

A further possibility of reducing investment requirements is to avoid over-designing the facilities to be provided. The use of stage construction methods, for example, reduces initial capital investment, and yet permits an increase in capacity as and when traffic requires. The maximum use of local materials will also help to reduce costs.

Finally, transport costs can be reduced by the physical co-ordination of facilities and services and by rate policies and through the selection of routes that permit the various methods of movement to be operated and used as an integrated system.

Shifts in energy sources

In all parts of the world, the movement of mineral fuels absorbs a substantial proportion of available railway capacity. Coal, both for the railway itself and for industrial users and utilities, accounts for as much as 25 to 40 per cent of total ton-kilometres of rail operations in many countries. This means that the capacity of the railway system is heavily committed to this one commodity.

The railways of India are heavily burdened with coal movements, and the anticipated expansion of coal production will involve very extensive additions to railway plant. One-third of the movement of coal from the northern fields is for use by the railroads themselves; thus, the electrification of the railway or its conversion to diesel power would greatly reduce the volume of coal to be transported. But even more important is the possibility of developing nuclear power plants, for this might mean substantial savings in the purchase of rail equipment and a reduction in railway congestion.[32]

Another possibility of reducing transport requirements is to be found in the potential of solar energy. Asia may ultimately derive as much wealth from the sun as nineteenth century industrial nations obtained from coal. Already it is possible to cook, heat, and refrigerate with solar energy. These and other developments in solar equipment are of particular significance to the ECAFE region which is typically poor in transport but rich in sunshine.[33]

These possibilities indicate that revolutionary changes in the volume and character of transport requirements may take place as a result of either a discovery of resources and their use through known techniques or of a worldwide break-through in technology. Concentrated exploration and research to hasten these developments might well prove of major importance in resolving problems of transport.

Related to energy resources is the possibility of desalting sea water and transporting fresh water for irrigation or hydroponics in desert areas now dependent on distant food supplies. The southern part of West Pakistan, bordering on the Arabian Sea, now relies on very long hauls to supply the Karachi metropolitan area with food. Pipeline transportation of water from the sea may some day irrigate that area and thus eliminate the necessity for hauling large volumes of perishables from the north.

Industrial location and urban planning

In newly industrializing countries, the opportunity is offered to locate new factories and other industrial establishments where transport requirements will be minimized. In some cases, this will mean location close to sources of raw materials; in others, proximity to markets may be desirable. It may be possible to locate heavy industry with access to water transport, or to disperse industrial sites in such a way as to balance the flow of railway traffic. The national planning of the pattern of industrial sites makes it possible, in conjunction with the development of road transport, to avoid the overconcentration and congestion typical of countries that industrialized in the railway age.

Rapid industrialization is also resulting in rapid urbanization, and this in turn is creating problems of mobility that plague large cities everywhere. Congestion in the major urban centres of the world is not only reducing the efficiency of economic activities but is requiring heavy capital investments in highways, buses, and rail facilities. In newly developing countries, efforts should be made to minimize the economic burden of unnecessary urban congestion by limiting both the geographic size and population density of such areas.

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[32] Norman L. Gold, *Productive Uses of Nuclear Energy; Report on Regional Economic Development and Nuclear Power in India*, National Planning Association, Washington, D.C., 1957.

[33] United Nations, *New Sources of Energy and Economic Development*, 1957.

The urban population of Asia is growing very rapidly, yet in 1950 only 8 per cent of the total population lived in cities of 100,000 or more. Some countries in the ECAFE region are only in the early stages of urbanization.[34] There is still time, then, for newly developing countries to profit by the mistakes that other industrialized areas have made in permitting the uncontrolled growth of cities. The avoidance of transport congestion, and the high costs of coping with it, make it necessary to prevent excessive concentrations of people engaged in an economic activity in any one place. The attempt to supply transport to meet demands from unplanned growth is doomed to failure.

Appropriate action can be taken through national plans designed to establish the location and size of cities, and through industrial location and zoning policies. Within the city itself, there is the further need for planning that will improve living conditions, minimize the amount of necessary movement, and especially reduce home-to-work travel volume. Land-use patterns can reduce costly and unnecessary street mileage and prevent the concentration of economic activity at the centre.

But major importance should be attached both to industrial location as the key to decentralization, and to the limitation of the size of the metropolis. Only by the dispersal of employment opportunities will it be possible to achieve a closer relation between home, work, and commounity life, and to reduce the time-consuming journey to work.

TRANSPORT SOLUTIONS THROUGH STORAGE AND PROCESSING

The predominant role of agriculture in the ECAFE region means that the demand for transport is highly seasonal. It therefore becomes important to reduce wherever possible the burden of unnecessary peaks of demand on transport facilities. To that end, investment outside the transport field is often desirable as being cheaper and more effective in stretching transport capabilities than investment in transport improvements.

When grain shipments arrive at Karachi, there is a heavy demand for empty railway wagons to meet the demands of this high-priority movement. Transport on the North Western Railway is often disrupted, and other demands for transport capacity must go unfilled in order to ensure that the grain ships are unloaded promptly. One solution is the purchase of more freight cars, but another less costly remedy may be found in the provision of a place to store grain, which can then be moved over a longer period of time as rail capacity becomes available. Godowns located in consuming areas may also be necessary in order to eliminate emergency shipments or to reduce transport demands at times when the railway system is overburdened.

The rapid movement of perishables of all kinds poses a difficult problem for the transport system. Refrigerated transport and speedy delivery involve very substantial investment. An effective alternative, however, may be supplied by the establishment of plants close to sources of supply, where food can be dried, salted, frozen, canned or otherwise processed.

Need for comprehensive attack

The development plan for the economy supplies the basis for arriving at a balance between transport and other economic activities. It has been pointed out, for example, how rapid industrialization has imposed burdens on transport that have resulted in severe congestion and restricted output. A process of trial and error is necessary to restore a balance between transport and development, either by increasing transport capacity, by cutting back development programmes, or by allowing the situation to arrive at a state of balance through competition for the limited transport available.

A second type of balance, among the various methods of transport, is also called for in order to provide a comprehensive system that makes for the best overall economy and performance. This type of balance has been neglected in the planning of transport systems for a variety of reasons. Most important is the fact that the needs of each form of transport are estimated separately; thus, the question of bus or truck versus rail, for example, or rail versus air, may never arise. Or, at best, it arises only at the planning commission level, long after there is any practical opportunity to weigh the individual decisions that lead to an overall allocation. What is needed is a prior decision as to whether trucks might advantageously replace branch-line rail service, or whether a regional air passenger service network would prove more economical than investment in the rail and boat services required for surfaec passenger travel.

Transport investment decisions are generally made on the basis of the appraisal of needs separately arrived at by claimants for the several transport media. This separate approach has obvious drawbacks. The railways are often the only transport medium adequately organized and armed with sufficient data to make a convincing presentation. Because of the obsolescence of many facilities, the need for renewal is obvious, yet the case for the facilities themselves is not always clear. It may be preferable to invest in some other form of transport, or to make some other type of investment, such as in storage capacity. These alternatives are generally not taken into account, and the system lacks balance as a result.

We necessarily come back to the position that the determination of transport requirements involves building from the bottom up by an appraisal of individual projects —either confined to a particular route or involving a particular type of improvement, such as the dieselization of the railways, or the improvement of air navigation facilities. It is the consideration of a series of individual projects that determines transport requirements as a whole. In its simplest form, this means computing the cost of alternatives and measuring the benefits expected. Other considerations may then have to be taken into account, including such factors as available resources, the supply of capital and labour, the nature of the existing transport plant, and the availability of foreign exchange.

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[34] Philip H. Hauser, *Implications of Population Trends for Regional and Urban Planning in Asia,* ECAFE Working Paper No.2, Seminar on Regional Planning, Tokyo, July-August 1958.

In national planning efforts to date, there has been no serious attempt to determine the amount of transport investment needed to achieve a balanced system of transport. Information has not been available on which to base a considered judgment, and organization arrangements in the transport field preclude the use of such an approach. The allocation process has been one of reducing extravagant requests for investment funds and of seeking to maintain peace among the claimants rather than to use the most advantageous methods of transport.

The third type of balance to be sought in estimating needs involves consistency among the various types of investment relating to each individual method of transport. It is wasteful to provide roads without making possible the operation of road vehicles. In many countries, restrictions are imposed on the acquisition and operation of trucks, often in order to protect the railways from competition. It may be equally wasteful to invest in additional port capacity without considering the need for tugs and handling equipment, or to invest in diesel locomotives without the modernization of rail lines and terminals.

It is clear from the relation between economic activities and transport volumes that transport investment must be guided by the regular supply of two sets of statistical information. One is the kind of general economic data supplied by a national planning agency, covering population, income, agricultural and industrial output, consumption, trade, and plans for further economic development. The other type concerns the transport field itself. It includes volumes and types of traffic, origins and destinations, physical condition of transport facilities, and financial data. These regularly recurring data need to be supplemented by special reports and surveys describing transport trends, shipping requirements, and specific transport inadequacies. General statistical information and transport statistics must then be so related as to furnish a means of appraising the transport task and weighing the ability of the transport system to meet requirements.

In most countries, good railway statistics are available, and airline data are also generally adequate. The major statistical weaknesses are the lack of information on the condition of facilities and equipment, and on costs of providing various types of services. The importance of cost data for all transport media is particularly great under today's conditions of inter-agency competition, which require a better understanding of costs and their behaviour as a basis for rate-making and for decisions with respect to alternative transport investments. The greatest gap in transport information is in the areas of road and water transport.

In conclusion, transport requirements can be expressed in several ways in the anticipated volume of freight and passenger traffic to be served, in the physical facilities required, and in the financial outlays necessary to build, maintain, and operate the system. Here, we have considered the first of these—the amounts of traffic to be anticipated in the process of economic growth. The kind of facilities to be provided will be considered in a later discussion of the choice offered. Only after these choices have been made is it possible to translate physical plans into financial requirements.

III. CHOICE OF TRANSPORT METHODS AND INVESTMENT CRITERIA[35]

The central problem dealt with in this section is the allocation of investment, with special reference to countries in the ECAFE region, between the different transport services of road, rail, inland waterways and (where relevant) coastwise shipping. In the previous section the nature and importance of the demand for transport was considered. In this section, the main concern will be with the best ways of meeting that demand. Throughout this section, attention is concentrated mainly on the carriage of freight traffic.

Advantages and disadvantages of alternative transport methods

The range of activities covered by the general term 'transport' is perhaps as great as that included in any other single industry. It is obviously not possible, or, for the purpose of this discussion, desirable, to compare the relative advantages and disadvantages of each form of transport for every one of the very large number of different types of demand for transport services. If we concentrate on five main variables—length of haul, weight of consignment, loadability, traffic density, and nature of route—the problem becomes manageable, and it is possible to focus attention on broad 'areas' of traffic[36] which can be related to the pattern of demand in individual ECAFE countries.

LENGTH OF HAUL

One of the best established facts about the costs of a rail haul is that these tend to 'taper' with increasing distance. As fixed costs per shipment, which are more important for railways than for roads, are spread over a longer distance, then the cost per ton-kilometre will fall. Railways, therefore, have a relative advantage, compared with roads, for the longer hauls. Just when a haul becomes sufficiently long-distance for the railway advantage to begin to become important depends upon a number of other variables which are discussed below, but it is suggested that the rail distance advantage is likely to begin to offset other disadvantages for hauls of about 160 kilometres or more.

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[35] Revision of E/CN.11/DPWP. 6/L 5, a paper prepared for the sixth session of the Working Party on Economic Development and Planning by the ECAFE Secretariat.

[36] C. Sharp, "The Allocation of Goods Traffic between Road and Rail" in *Journal of Industrial Economics*, July 1959, pp. 206-213.

On the other hand, road vehicle costs do not show the marked tapering off with increasing distance that is found on the railways. The overhead costs borne by the roads are relatively much less important. Also, there is an increase of costs for road transport beyond certain mileages; that is, when the vehicle cannot get back to its home depot in the same day (resulting in poorer vehicle utilization and increased labour costs when the driver must be maintained overnight away from home). The maximum outward and return journey which can be performed in one day will vary with permitted driving hours, loading and unloading time, and the average speed obtainable (and can be extended when interchangeable trailers are used), but is not likely to be much more than 350 kilometres in most ECAFE countries, and may be much less.[37] There will be further 'cost steps' when the vehicle and driver must be kept away from the home depot for a second and subsequent nights. The relative advantage of lorries is therefore particularly marked for shorter hauls of less than 150-200 kilometres (300-400 km round trip).

Inland waterway craft and coasting vessels are in an intermediate position between railways and roads. Overhead costs will be less important than on railways but, on the other hand, the 'returning to base' problem of lorries is not normally encountered. In competition with railways, craft and vessels may be expected to carry consignments for the shorter hauls. Small inland waterway craft may be under no disadvantage, compared with roads, for very short hauls (such as local transport within an urban area covered with a network of waterways) where no transshipment is required.[38]

WEIGHT OF CONSIGNMENT

The chief advantage of rail transport is for very heavy consignments. Whereas, in the ECAFE region, most lorries carry only five tons (and not more than 15-25 tons elsewhere), a trainload of mineral traffic may amount to 800 tons, or considerably more on a few railway systems. The maximum trainload of mixed 'general merchandise' traffic is usually much less than for minerals. Some examples of recent figures of actual average trainloads are:

Ceylon	95 tons
Federation of Malaya	111 tons
Great Britain	154 tons
India (broad gauge only)	554 tons
Thailand	128 tons

The railways will therefore have a considerable relative advantage, particularly over road transport, for goods such as iron ore and coal which can be despatched in consignments weighing hundreds of tons. The cost per ton carried on a train will continue to decline with increasing weight of the trainload, as fuel, labour, and terminal costs are spread over a greater tonnage. The cost of adding extra wagons to a locomotive, up to its pulling capacity, will obviously be very small.

Railways are at a relative disadvantage in carrying small consignments of one or two tons, or less, which cannot easily (except at high cost) be amalgamated in the normal conditions of railway operation and which will mean that many wagons with a capacity of 15 tons or more will be 'filled' with loads of only one or two tons. An important weight distinction for the railways is between 'carload'[39] and 'less than carload' (or wagonload) consignments. The rail loss on carrying less than carload traffic in the United States was estimated at $100 million per annum.[40]

The optimum weight of consignment by road (which will just fill a lorry) will vary with the carrying capacity of the lorries used but will of course be very much smaller than a trainload. Road vehicles will be at a relative advantage for consignments in the 0.15-4.0 tons weight range, as these can be amalgamated on a lorry and give a good load factor. The importance of this factor is illustrated in the following actual costing figures.

Table 9.

THE EFFECT OF COMPOSITE LOADING ON ROAD TRANSPORT COSTS IN THE UNITED KINGDOM[a]

Length of haul (km)	*Rail cost/ton ($)*	*Road cost/ton Single ($)*	*Road cost/ton Composite ($)*
32	3.78	1.89	1.4
64	4.18	2.8	1.68
97	4.34	3.78	2.1
129	4.48	4.62	2.52
161	4.68	5.6	2.8
241	5.04	8.12	3.78
322	5.39	10.5	4.76

[a] All figures relate to a 4½ ton consignment. The two road figures are the cost of carrying this as the only consignment in a 6-ton lorry (75 per cent load factor) and as a part of a composite load in a 15-ton lorry with a 90 per cent load factor.

The advantages of composite loading in the given circumstances would keep road costs below rail costs even for hauls of over 300 kilometres (200 miles).

The roads will also have an important relative advantage over rail for consignments, mainly in the 1-5 ton weight range, which must be transshipped when sent by rail (being collected and delivered by road vehicles) but which can be collected, carried on the trunk run, and delivered all by the same road vehicle without any transshipment at all. This particular advantage does not exist for smaller consignments weighing less than one ton. Parcels (under .15 tons) and 'smalls' (0.15-1 ton) consignments must normally be transshipped from collection to trunk vehicles (and into delivery vehicles) on road as well as on rail. The cost of amalgamating the small parcels consignments is not necessarily higher on the railways than on the roads. Where road vehicles carrying loads of 15 tons or more are in use, they will usually have lower costs for a full load of 15 tons than the railways.

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[37] In the United Kingdom, with legal restrictions on driving hours and widespread congestion, the maximum distance is about 300 kilometres.

[38] For supporting evidence, see *Report of XIXth International Navigation Congress,* 1957, B. Richard, paper on Sweden, p. 8.

[39] 'Carload' is the minimum weight of consignment which can be said to fill a wagon (assuming that amalgamation of loads is impracticable). In the United States, the breakpoint for carload consignments was estimated at 10,000 lb. (4536 kilogrammes).

[40] United States Senate, *Hearings before the Sub-Committee on Surface Transportation of the Committee on Interstate and Foreign Commerce, Problems of the Railroads,* 1958 Vol. II, p. 748.

The somewhat complicated relationship between consignment weight, length of haul, and the relative levels of road and rail costs is summarized in a simplified form below. It is assumed that traffic flows are regular and that there is a sufficient total volume of traffic to make rail operation economically possible.

Weight of consignment	*Road/rail cost position*
Under 0.15 tons	Road and rail competitive at all distances.
0.15-4 tons	Road costs lower except for very long hauls (more than about 600 kilometres).
4-15 tons	Road costs lower for hauls up to 130-160 kilometres, rail lower beyond this distance. Road also cheaper for 'full-load' traffic in 15-ton lorry.
Over 15 tons	Rail costs normally lower, though roads may be competitive for consignments weighing up to 200 tons where large vehicles can be used.

The range of carrying capacities of inland waterway craft is wider than that of either road vehicle or trains. While there are numerous very small boats and barges, some craft operating in the ECAFE area may carry up to 1,000 tons, and a flotilla with two flats can have a capacity of 3,500 tons.[41] The very considerable capacity of the larger craft gives them an important advantage in carrying very large tonnage of bulk consignments which may be as great as that of the railways. The carrying capacity of coastwise shipping is limited mainly by port facilities and depth of anchorage.

LOADABILITY

The loadability of a consignment is measured by the relation of its weight to its bulk. The carrying capacity of both road vehicles and railway wagons can be measured either as the maximum possible axle load or as the weight of the maximum volume of traffic of standard loadability which they can carry. Traffic of standard loadability may be defined as occupying about 2.625 cubic metres per ton. If consignments are heavier than this (in relation to bulk) then a hundred per cent load factor is more likely to be obtained, although unfilled cubic capacity may remain. Consignments of less than average loadability will give a less than 100 per cent load factor, because the wagon or road vehicle will be filled with a load lighter than either axle load capacity or than a full load of traffic of standard loadability.

There are two important ways in which loadability may affect a comparison of road and rail costs. Firstly, it is very important to remember that, for traffic of standard loadability or less, railways have a 'built in' disadvantage in that they will normally achieve much poorer load factors than road vehicles.[42] Comparisons of road and rail costs based on *capacity* ton-mile figures can therefore be very misleading. Secondly, road vehicles have a relative advantage for traffic of poor loadability in that they show more flexibility in the relationship of axle load to cubic capacity. Smaller vehicles generally have a higher ratio of standard capacity tons to axle load capacity than larger ones. This means that traffic of poor loadability can be carried more cheaply in smaller vehicles (with lower operating costs) than in larger ones. (For example a 6-ton consignment of 50 per cent loadability could be accommodated in two 4-ton capacity vehicles). Rail wagons do not possess this flexibility.

TRAFFIC DENSITY

The size of the traffic flow, in both directions, between two places, is one of the main influences determining the load factor which can be achieved. The railways are less suited for routes with light traffic where it is impossible to achieve a good over-all load factor. Although a good load factor is of course desirable for road vehicles as for all forms of transport, road costs will not be so high as rail costs on routes with a sparse traffic flow. The possibility of using smaller and more cheaply operated road vehicles gives road operation a flexibility not possessed by the railways.

NATURE OF ROUTE

Some routes are direct, that is between places on main trunk roads, railways, or waterways, whereas others are 'cross-country' between places not connected by any main routes. There is likely to be a high inverse correlation between 'indirectness' of route and load factors. These two influences can, therefore to some extent, be considered together. The cost position of the railways is likely to be most favourable on direct routes between main centres of population or in 'private siding to private siding' operation — that is, where consignments are carried direct from a mine or factory to their ultimate destination without transshipment. Railways are at a considerable disadvantage for cross country routes where the wagon needs to be shunted in several marshalling yards. The operation of 'pick up' trains collecting wagons loaded at a number of separate stations is also very costly.

In all countries in the ECAFE region, as elsewhere in the world, the total length of road is considerably greater than that of rail track.[43] This means that for cross-country traffic, road vehicles are likely to have a relative advantage, the number of transshipments being reduced or eliminated.[44] There are a few areas, such as parts of Burma, Pakistan and Thailand, where a dense waterway network makes waterways the best carrier for cross-country traffic, but usually roads will have the advantage.

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[41] At present craft for such large tonnages are operating in Burma, India, and Pakistan among ECAFE countries.

[42] See *supra*, p. 23.

QUALITY OF SERVICE

Transport users are not only concerned with the cost of transport services; quality is also of great importance. Evidence obtained during a survey made in the United Kingdom showed that the three most valued qualities of service (apart from cheapness) were speed, reliability, and low damage level.[45]

Speed, to transport consumers, measures the time between notification that a consignment is ready for collection and its delivery to the consignee. Generalizations about the speed of different transport services are somewhat dangerous, since there are so many variable factors. Railways lose time on terminal and marshalling operations, but are quicker on trunk journeys when compared with road. This means that the longer the direct trunk haul the more likely is rail to be quicker than road. Rail is likely to become the faster service for direct hauls of more than about 400 km, though this figure may vary considerably in different areas. Waterway crafts are relatively slow moving, but may make up for this on hauls originating and ending on a waterway where no time is spent in transshipment. A special advantage of road vehicles is their flexibility in timing. On the other hand, as railway operation demands adherence to fixed time-tables, it is more difficult to carry a rush consignment at short notice or to wait for an important consignment that has been delayed.

Reliability depends mainly upon the managerial efficiency of a particular transport organization, and it is not possible to make any general comparisons between different services in this respect.

Other things being equal, the level of damages will depend upon the nature of the journey and the number of transshipments required. Damage is most likely to happen during transshipment, and roads usually gain over railways here. Damage in transit is least likely to occur by inland water transport, which has a real advantage for carrying certain fragile commodities. Road transport is likely to be smoother than rail, except where road surfaces are very poor, or where individually braked wagons are used on the railways.

SUMMARY

The main point established by this analysis of the advantages and disadvantages of different forms of transport is the need for governments to make a careful study of the nature of the demand for transport as one of the most important factors influencing the allocation of investment between alternative transport services. Any one of the main forms of inland transport may prove to be the best investment choice in different local circumstances. Some factors, such as the average length of haul for the particular transport demand, may be reflected in estimated cost comparisons, while others, such as the importance of quality differences, may be incapable of precise measurement. Some simplified examples of the way in which the nature of local demand is likely to influence transport investment decisions may be given. Where the demand is for the conveyance of agricultural products in relatively small consignments, mainly from villages to nearby towns, the relative advantages will be mostly in favour of roads, and natural waterways where they exist. The movement of paddy in Thailand and of wheat in Iran approximates to these conditions.[46]

Where, on the other hand, agricultural produce is aggregated into bulk consignments, either for movement to processing plants or for export, then the roads may lose their advantage to rail or waterways. The movement of jute in East Pakistan and paddy in Burma and Viet-Nam are good examples of this type of transport demand. If the demand to be met is associated with the development of a heavy industrial plant or mines, necessitating the movement of bulk consignment of ore or other raw materials, then this suggests that a railway or a waterway, if already available between the required locations, will be the most suitable form of transport. The building of India's new steelworks at Bhilai, Durgapur, and Rourkela is an example of the foreseeable growth of this kind of demand. The nature of future transport demand is also clearly influenced by the size of the country. Future demands in a country with the area of Ceylon, for example, are obviously likely to result in a lower average length of haul than would arise in India, and this would be a factor favouring the construction of new roads rather than more railways.

It is important to stress at this point that the nature of transport demand, important though it is, is not the only influence which should determine the allocation of investment. Variation in construction costs, the effects on a country's balance of payments and employment positions, and integration with the existing transport system, are important factors which will be considered later in this section. There remains to be discussed the problem of making some quantitative measurement of the importance of possibly conflicting 'nature of demand' factors (such as heavy consignments carried for very

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[43] The ratio of road to rail kilometres (1958 figures) varies considerably in different countries. Some examples are:

	Ratio of road kilometres: 1 km of rail open	
	Total length	*All-weather road only*
Japan	46.5	...
Ceylon	7.9	7.2
India	9.9	3.8
Burma	5.2	2.9
Pakistan	8.6	1.3
Thailand	2.3	1.1

[44] In the United States of America, 25,000 communities are served only by lorries: *Problems of Railroads, op.cit.*, p. 748.

[45] Walters and Sharp, *Study of Transport Costs and Charges*, Birmingham (unpublished at time of writing).

[46] Yale University, *Iran*, Human Relations Area Files, New Haven, 1957. pp. 203-215.

short hauls). Also, the important possibilities of joint road-rail operation through the use of some form of road/rail container have, so far, been excluded from the discussion. With these qualifications, the advantages and disadvantages of the main transport alternatives for different types of traffic are summarized below.

FREIGHT TRAFFIC FOR WHICH RAIL, ROAD, OR WATERWAY TRANSPORT HAS A RELATIVE ADVANTAGE

Rail

Bulk consignments, weighing more than about 15 tons, the advantage becoming more marked with consignments of 200 tons or more.

Regular traffic flows.

Long distance hauls, rail advantage beginning to be important for distances of more than 160 kilometres.

Private siding to private siding traffic, where road-to-rail transshipments are avoided.

Heavy traffic between main centres, giving good load factors and avoiding intermediate marshalling.

Road

Smaller consignments, especially in the 1-15 ton weight range.

Shorter hauls of less than about 160 kilometres.

Cross country routes, and routes with sparse traffic giving poor load factors.

Consignments of poor loadability.

Consignments needing urgent delivery.

Waterways

Large bulk consignments of 100 to 2,500 tons.

'Low grade' bulk cargo with a low price relative to weight.

Consignments which can complete the whole transit by water.

Fragile consignments.

Routes with a poor over-all load factor.

Long-term considerations of technological changes and obsolescence

PROSPECTS OF TECHNOLOGICAL CHANGES

Like all other industries, transport is subject to the influence of technological development. The position is indeed more complicated than elsewhere, because each of the three main forms of transport has distinct techniques and may not be affected in the same way and at the same time by technological changes. There is always the possibility that the relative competitive positions of the transport alternatives may be changed drastically by an alteration in the cost structure of one of them. The management of a railway undertaking needs to be aware not only of the latest developments in railway engineering, but also of any important advances in the techniques of road or waterway operation which will have an important influence on their competitive position. Governments considering their transport investment policy must examine not only the present relative advantages of alternative transport methods but also the expected effect of future technical changes. This does not mean making uncertain speculations about the distant future but allowing for predictable developments within the lifetime of the assets in which investment is proposed.

In many parts of the world, the transport industry has not yet completed the adjustments made necessary by the development of the internal combustion engine at the end of the nineteenth century. Some examples of recent or expected transport technological developments may now be considered. Steam locomotives are likely eventually to be replaced on all railway systems by electric or diesel/electric engines. Diesel/hydraulic and diesel/electric locomotives have superior pulling power[47] and much better availability in comparison with steam engines. Their improved acceleration makes possible a more intensive use of track. Improved marshalling yard techniques with centrally controlled braking, better layout and the improved oleo-pneumatic buffers will allow more wagons to be handled[48] with less damage to their contents. The use of pressure braking or the improvement of vacuum braking and the adoption of centre buffer couplers or improvement of screw couplings can contribute to the increase in the maximum capacity of trains. Of future possibilities, the most important is that of obtaining cheap electric current from atomic energy. The emergence of completely automatic train operation with 'decision-making', determining when trains can run, is also a long term possibility.[49]

Developments in road transport in the foreseeable future are most likely to centre around the improvement of roadways. The building of motorways can cause a large increase in the tonnage which can be carried, raise average speeds, and allow the development of much larger and more economic vehicles. There has already been a development in some countries of 'road trains'—tractors with two or more trailers and a very large carrying capacity.

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[47] Some sample figures are:

160 ton steam locomotive—maximum pull of 1200 hp. at 97 kph.

110 ton diesel/electric locomotive—maximum pull of 2500 hp. at 97 kph.

80 ton electric locomotive—maximum pull of 2500 hp. at 97 kph.

[48] A modern marshalling yard, of which the Villeneuve yard near Paris is an example, can handle 5,000 wagons a day.

[49] See, for example, *Signalling and Communication*, Nov. 19, 1959, p. 17.

One of the most likely changes in the waterways is an increase in carrying capacity with the use of more powerful craft (such as diesel screw propelled boat) which can push larger flotillas.[50] The use of radar as a navigational aid will make it possible for craft to travel at night on some waterways with a consequent reduction in journey time. A rather more distant prospect than cheap atomic electricity is the direct use of nuclear energy for propelling craft and coastwise vessels.

Both road and rail may be affected by improvements in devices which make joint operations possible.[51] Joint road/rail operation is already extensive in the United States and in parts of Europe, and it is growing quite rapidly. Road and rail transport undertakings will also be affected by any substantial reductions in air freight and passenger charges. Airways already compete for long distance passengers and specialized freights (e.g. mail), and their very great advantage in the matter of speed on all routes of any distance would mean a large transfer of traffic to air if costs became competitive and the collection and delivery problem was overcome. Probably the most important way in which present transport planning should be affected by foreseeable technical developments is in making allowance for them when new routes are being constructed.[52] The use of piggyback rail/road containers has been greatly hampered by the narrowness of gauge of much existing rail track.

PROBLEM OF OBSOLESCENCE

An important problem for all branches of the transport industry is that of obsolescence. Where there are no technical changes, it is not particularly difficult to decide what will be the economic life of a piece of equipment. This can normally be calculated as a function of maintenance and depreciation costs and of scrap value. The development of improved equipment raises the question of whether the economic life of existing equipment should be shortened, and if so by how much. There are two ways in which the problem is likely to be met—consideration of the replacement of an individual piece of equipment; and of a complete system or transport 'unit' (such as steam locomotives or a railway branch line). The less complex problem of an individual item of equipment may be considered first.

Assuming that scrap value is nil, that replacement and historical cost are the same, and, for the moment, that there are no technical changes, the economic life of a piece of equipment will be determined by the relation of depreciation to maintenance costs. As time goes on, average annual maintenance costs (per unit of services) continue to rise whereas average depreciation falls. The economic life of the equipment ends in that year when average annual "asset costs" (interest, maintenance and depreciation) are at a minimum. After that year, average costs will start to rise.

Suppose now that a technical improvement has reduced the annual average cost of the new asset below the minimum cost level of the old one. If this saving is greater than the additional costs incurred by the replacement of the old asset earlier than at its optimum economic life (differential cost margins above the minimum cost level spread over the shortened length of life), there is in principle a case for the earlier scrapping of the old asset.

There is, however, one important qualification to the application of a rigid cost based formula for the determination of obsolescence. The aging of equipment is reflected not only in increasing maintenance costs but in breakdowns, and hence unreliability. Transport undertakings may find it necessary to shorten the economic life of assets in order to maintain the quality of the transport service provided. It is possible to allow for availability in length of life calculations if life is expressed in 'weeks available for work' or 'miles run' instead of years. Other factors to be considered in determining the economic life of a road vehicle are the difficulty of obtaining spares for older vehicles; the effect on drivers of having old vehicles; and the higher running cost of such vehicles.[53]

The problem of determining the effect of technical change on the obsolescence of complete transport 'units' is basically similar, though necessarily more complex. The main difference between replacing a branch rail line by a road service and retiring a locomotive before the end of its original economic life is that, in the former case, a much more substantial new investment is necessary. Although track, signalling equipment, stations, etc., must all be renewed eventually, this will take place at different times, and at any one time abandonment of the 'unit' will mean scrapping some assets which still have many years of economic life left. But this does not mean that the case for closing a rail line (or a road or canal) may not be just as strong as that for shortening the life of an individual asset. If technical progress has produced new transport services which can meet the same demand at lower over-all cost (including of course interest payments on new capital raised), then the substitution should be considered.

There may be a special problem in dealing with the outstanding debt on the replaced transport 'unit'. In decisions whether replacement should take place, all that matters is that both the 'old' and the 'new' units should be treated in the same way. If the old unit is debited with full interest charges on outstanding debt, then these charges, as well as those on newly raised capital, should also be charged against the new unit in cost comparisons. Once the substitution has been made, however, the 'old' loan charges should be met from taxation or from the income of the whole of a national transport undertaking rather than from the revenues of the new transport unit alone. If the new unit is not under the same ownership as the old (as when private road haulers enforce the closing of a rail branch line by capturing its traffic), there will, of course, be no question of making the new transport unit users pay the interest on the outstanding debt of the outmoded unit.[54] Where the railways are publicly owned but road haulage is in the private sector, there may be a temptation for governments to use their powers to resist the effects of technical change (in this case, the development of the internal combustion engine) and retain as much traffic as they can for the nationally owned undertaking. But the community will be worse off if this means the artificial preservation (through licensing restrictions or discriminatory taxation) of a high cost transport method (such as some rail branch lines built before the development of modern road transport) when a lower cost alternative is available. Perfect foresight is impossible, and technological progress must sometimes result in a drastic revision of estimates of the economic life of equipment. Even for countries where capital is scarce, the continued use of obsolete equipment and transport methods may in the end prove more costly than a ruthless policy of scrapping or abandonment.

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[50] Flotillas now operating in the United States have a capacity of more than three 100-car freight trains. *Problems of Railroads, op.cit.*, p. 1718, evidence of Dr. Barloon.

[51] Three main types of "container" designed to be carried both on the road and by the railways have been developed: the road/rail container, the "piggy-back" container, and the "roadrailer".

[52] Changes in transport technique may also have a significant effect on traffic demand to be considered for national planning. See *supra*, pp. 21-22.

[53] Mr. G. Dickinson, Principal Traffic Costing Officer, Western Region, British Railways gave valuable advice on these matters.

Choice of labour-intensive and capital-intensive techniques

POSSIBILITIES OF LABOUR-CAPITAL SUBSTITUTION

While it is not possible to give here a complete description of the processes involved in constructing and operating roads, waterways and railways, some of the principal ways in which the proportions of capital and labour can be varied may be indicated. Generally, the possibility of substitution is greater in construction than in operation. In rail track construction, rail-laying machines, power driven tie tampers and earthmoving machinery can be used, or alternatively manual labour. Bridge and tunnel building demand some mechanical equipment, but there is a choice in the amount of power used, for example, in riveting for steel bridges (power hammer) and tamping concrete (vibrators). If extra labour is employed (or the same labour over a longer period of time) to reduce gradients and curvature, the tractive effort required will be reduced, and fewer or less powerful locomotives will be needed.[55]

In road construction, manual labour may be replaced by mechanical excavators, earthmovers (such as bulldozers and scrapers), tractors, rollers, concrete mixers and other suitable equipment. There can be a wide variation in the amount of power available. In canal construction, there is a choice between manual labour and mechanical excavators and earth moving equipment. The improvement of natural waterways by dredging can only be accomplished by the use of mechanical equipment, but embankments can be constructed mainly by manual labour.

In the operation of rail, road and waterway undertakings, the main sphere for choice between labour and equipment is in loading and unloading. Heavy indivisible consignments demand mechanical aids, but for other consignments such equipment as fork lift trucks is optional. An extreme form of mechanization is a conveyor belt for sorting consignments in a goods depot. The introduction of palletization may involve the use of power-driven trucks. In road and waterway operation, the ratio of manpower to capital equipment can be altered by varying the size of the vehicle or craft. Good operational practice will always entail the optimum utilization of lorries, trains and craft, but there is limited scope for following a labour intensive technique by increasing the normal complement of 'crew'. A mate can travel on a lorry, for example helping to extend maximum continuous driving time slightly, and to reduce loading and unloading time. (This is seldom an economic proposition, though it may be a legal obligation, in high wage level economies). In all transport methods, the number of maintenance workers can be varied, with a consequent effect on the economic life of capital equipment. Track maintenance can be partly mechanized by the use of such equipment as adzing machines, ballast cleaners, and weed burners. Track repairs can be facilitated by the use of relatively simple equipment, such as portable rail sawing and drilling machines. Railways have a choice between manual and automatic block signalling methods. Various degrees of mechanization, too, are possible in marshalling operations; for example, wagons can be braked by 'car-riders' riding on each wagon, or by retarders fitted on the track and operated from central control towers.

CHOICE OF CAPITAL-LABOUR RATIOS

In the choice between more or less labour intensive techniques, certain criteria can be used. Firstly, there is the obvious comparison between the cost of the machine (usually calculated as interest payments plus maintenance and depreciation costs) and that of the workers whom it will replace. The cost of the workers will be relatively higher to the extent that labour is less productive without the machine, and this low productivity is exactly the main drawback of a labour-intensive policy. A very important consideration here is whether there is sufficient work to be done for the reasonably full utilization of equipment. But it is seldom that there will be a simple equalization between a machine and a fixed number of workers. The quality of products may differ, the time involved in construction work may vary,[56] and it may not be possible to use one machine without mechanizing other processes as well.[57] In road and rail construction, the compacting of road or track foundations may suffer if the work is tackled entirely by hand tools. A consistent and controlled concrete mixture is unlikely to be obtained without the use of a mixer. The depth and width of a canal may be limited if there are no mechanical means of removing earth or cutting through rock. Signalling becomes progressively more reliable as the influence of the 'human element' is reduced, and the incalculable benefits of greater safety may be considered to outweigh any increase in cost.

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[54] This interest should also be ignored in calculations of the earnings from new capital invested in the new unit.

[55] If this result is achieved by using more capital equipment, it would be a matter of calculation to determine whether or not a net saving of capital would result.

[56] The Japanese railway authorities have found, for example, that rails may be renewed with a rail replacement machine four or five times more quickly than with manual labour. *Improved Methods of Track Construction and Maintenance*, Japanese National Railways, 1954.

[57] A road roller may not always be fully utilized, for example, where road surfacing is being carried out entirely by manual labour and hand tools.

In the typical conditions of less developed countries in Asia and the Far East, the employment objectives may be considered to justify the adoption of labour-intensive techniques, irrespective of their economic merits. There are, however, two implications which should be underlined. First, the nature of the unemployed labour available must be considered carefully. Labour may lack both occupational and geographic mobility. Particularly in the sphere of operation, transport workers may need skills not possessed by those who have previously worked only in agriculture or nowhere at all. (Although it is true that transport construction does offer more opportunities for the employment of unskilled workers than most other industries). Secondly, it is important to allow for the reluctance of workers to leave their home areas. In calculating the benefits to be gained from using unemployed workers in transport projects governments must make an allowance on the debit side for the problem of moving workers from their homes and finding accommodation for them near construction sites.

It is sound common sense for those countries with a good supply of cheap labour to use more workers and fewer machines than countries with higher labour costs. But, in a labour intensive policy, allowance must be made for the quality of the product, for the effect on the time involved in construction and for the full utilization of those machines which labour cannot replace. The particular importance of the time factor must be stressed. In view of the importance of transport in making possible the development of a nation's economy, it would need a very strong reason to justify any policy which would delay the construction of a new transport project. In the construction of a road, railway or canal, the use of basic capital equipment can only be avoided at great cost in quality and construction time. In operation, the opportunities for substitution are fewer, but they can be taken more freely since there is much less likelihood of harmful effects.

The adoption of a labour-intensive policy will only affect the choice between alternative transport projects if there is a clearly established difference in the proportion of labour used in the construction and operation of the different services. There is little evidence of any such difference. Professor Chenery appears to believe that a labour-intensive policy may lead to the choice of a road instead of a rail transport investment, but gives no reason for this conclusion.[58] It seems very unlikely that there are any substantial differences in the proportion of labour costs to capital costs in road, rail or canal construction, although no comparable figures are at present available to establish this point. A comparison of the relation of labour costs to working costs is complicated in the case of road and rail because road haulage undertakings do not pay directly for the maintenance of the roads. Table 10 gives a comparison of the proportion of labour costs to total working expenses in two road haulage and four railway undertakings.

Table 10.

UNITED KINGDOM: LABOUR COSTS AS A PRECENTAGE OF TOTAL WORKING EXPENSES, SELECTED ROAD AND RAIL UNDERTAKINGS (ESTIMATED)[a]

	Year	*Ratio of labour costs to total operating costs (%)*
Railways		
North Western, Pakistan . . .	1955/6	51.1
Ceylon	1956/7	62.5
Burma	1956/7	63.1
British Railways	1958	64.4
Road haulage		
British Railways		
Road haulage vehicles . . .	1958	64.0
British Road Services	1958	62.9

[a] These figures were estimated from railway accounts and those of the British Transport Commission. They are not strictly comparable because of the different treatment of some items. For British Road Services, an arbitrary 80 per cent of maintenance or servicing costs was allocated to labour costs, and for British Railways two-thirds of maintenance and depreciation cost was allocated to maintenance and 80 per cent of this to labour costs.

Even allowing for a slight inflation in the labour cost percentage of road haulage undertakings because of the lack of road maintenance charges,[59] there is no clear evidence of any significant difference between the proportions of labour used in operating road and rail services. A comparison of direct road and rail labour operating costs in terms of wage costs per capacity ton-kilometre would show road labour costs to be much higher (about five or six times as great) than rail labour costs. But such a comparison would be misleading because the relation of road and rail capacities to tonnages carried is very different, and because there are many more ancillary rail workers. It is probable that the initial cost of locomotives and rolling stock would be greater than that of lorries for a new road service but that this difference would become unimportant if allowance was made for the longer life of locomotives and wagons and for expenditure on private motoring generated by the building of a new road. It may be concluded that variations in the labour/capital ratio can normally be disregarded as a factor influencing the choice between alternative new transport investment policies.[60]

The economic appraisal of transport projects and the allocation of investment

COSTS AND BENEFITS[61]

It is pointed out in Section II that transport planning entails building from the bottom up by an appraisal of individual transport projects, meaning in its simplest form computing the cost of alternatives and measuring the benefits expected to result.[62] The basic criterion for allocating an increment of investment either between industries or between individual projects within a single sector is its 'social marginal productivity'.[63] For the aim should always be to meet the given demand for the smallest consumption of the scarce resources of labour and materials, or, to put the point in a different way, to realize the greatest benefits, direct and indirect, from the use of the given resources. But there are certain difficulties in applying this concept, and an economic appraisal of the possibilities is by no means simple.[64]

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[58] H. Chenery, "The Application of Investment Criteria," *Quarterly Journal of Economics*, Vol. LXVII, Feb. 1953, p.87.

[59] This was at least partly offset in the United Kingdom by fuel and vehicle taxes.

[60] The ratio may of course be relevant to the choice between the development of a new transport project and the improvement of existing facilities — a situation which is considered in the following sub-section.

[61] See *infra*, pp. 33-35, Appendix I, for a treatment of adequacy of economic benefits in relation to costs in assessing individual transport projects.

The demand for transport is not a fixed and independent entity. It will depend in part on transport pricing policy, and governments may have to make some initial value judgement (particularly in relation to the demand for passenger transport) on where the limits to demand should be fixed. The size of the net benefit resulting from a given transport investment may be influenced by the way in which internal prices move. A theoretical examination, made in the Netherlands, of the changes produced in the economy of an under-developed country by the building of a new road, from an inland agricultural area A to a coastal industrial and exporting area I, showed that the total net increase in national product would be considerably larger if the reduction in transport costs resulted in higher prices being paid to the agricultural producers at A rather than in larger profit margins for the industrialists and exporters at I.[65] This may be illustrated from the situation in Thailand. If an improvement in facilities reduced the cost of transporting timber and rice from the interior of Thailand to Bangkok, then in order to derive maximum benefit from the reduced cost, Bangkok industrialists should pay the same delivered price as before for these products, the immediate benefit going to the rice and timber growers.

As has already been pointed out, transport is not a homogeneous service. Allowance has therefore to be made for different qualities of service. This consideration can be expressed quantitively by deciding what percentage increase in costs would be justified by a given improvement in quality. It was found in a study made in Great Britain, for example,[66] that traders were willing to pay, on the average, an extra 10 per cent in price for the greater speed of road services in delivering parcel consignments.

There is further a complicated problem of measuring *all* the costs and *all* the benefits resulting from a given investment. Social costs and social benefits may differ considerably from the private costs and private product which would be measured in any normal commercial balance sheet.[67] Social benefits (other than those directly resulting from an improvement in transport facilities) may vary with the choice of transport method. A transport investment which involves the development of a local ancillary transport industry (such as the construction of railway wagons or assembly of motor vehicles) may be of considerable indirect benefit to the national economy. Social cost may differ from money cost where imported goods are to be used in the transport investment and where the rate of exchange does not fully reflect the scarcity value of foreign capital (i.e. the opportunity cost of imported equipment exceeds that of home-produced alternatives by more than the difference in their money values).[68] In the practical problem of deciding on the desirability of making a given investment in transport in preference to any other industry what really matters is that a government should attempt to evaluate all the benefits and costs, both direct and indirect.

Apart from the question of social costs, the measurement of transport costs in money terms is a central problem of transport economics. Because of the existence of 'joint costs' shared between a large number of goods and passengers carried, the measurement of individual transport costs is often a problem of great difficulty.[69] Fortunately, in considering the choice between forms of transport when new investment is to be made, it is possible to by-pass the joint cost problem and to examine only the total costs of the alternatives without allocating costs to individual consignments or journeys.

Whether or not it is possible to make a calculation of the costs of alternative new transport investments based on estimated traffic flows which is sufficiently accurate to form a reliable basis of choice depends upon the complexity of the proposed investment (in relation to the existing transport structure) and the firmness of the estimates which can be made. Normally it is considered that the making of a comparison will be well worth while. Even if the result must be interpreted with caution, the attempt to make a quantitative measurement of the cost factors involved should prove of considerable value in facilitating rational decisions in the allocation of investment between alternative transport projects. A recent choice made between road, rail and waterways for the development of transport facilities in North East Nigeria was determined originally on an intuitive basis but was later justified, at the request of the World Bank, by cost (and in this case also revenue) comparisons.[70]

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[62] See *supra*, p. 21.

[63] Cf. Kahn, "Investment Criteria in Development Programs," *Quarterly Journal of Economics*, Vol. LXV, February 1951, pp. 38-61.

[64] There is a full account of the process of evaluating individual investment projects in the United Nations publication, *Manual on Economic Development Projects* (Sales No: 58.II.0.5).

[65] H.C. Bos and L.M. Koyck, *The Appraisal of Investments in Transportation Projects; A Practical Example* (Netherlands Economic Institute, 1958) p. 27.

[66] Walters and Sharp, *op.cit.*

[67] Cf. W. Arthur Lewis, *Overhead Costs*, (Allen and Unwin) p. 29 for a description of "escapable social cost".

[68] Cf. H. Chenery, "The Application of Investment Criteria", *Quarterly Journal of Economics*, Vol. LXVII, Feb. 1953, p. 81, for a discussion of the effect of the overvaluation of currency on investment criteria.

[69] A very full analysis of the problem is contained in a United Nations publication, *The Problem of Cost in the Inland Transport Industry*, a conspectus of the work of costing experts made by the Economic Commission for Europe. (Ref ME/583/55).

[70] Emerson, "The Choice of Transport for an Under-Developed Country". *Journal of the Institute of Transport*, May 1959, Vol. 28, No. 4, pp. 119-121 and 129.

It is difficult to construct any rules for a cost comparison of investment alternatives and yet avoid either over-simplification or a confusing amount of detail and complication which would make an actual comparison almost impossible. An attempt has been made here to develop a cost comparison model which, though it might need modification in use, does illustrate a practical method of tackling the main problems involved. These rules for a comparison of the costs of meeting an expected transport demand by different transport methods are set out and explained in appendix II to this section.

INTEGRATION WITH THE EXISTING TRANSPORT SYSTEM

In the analysis of the problems concerning new investments in transport it has so far been assumed that an area that was transportwise completely undeveloped was being opened up. But even these ECAFE countries which are most worried about the adequacy of their transport facilities have some kind of existing transport structure, and the complications which arise from the need to relate new investment to existing transport systems must now be considered. There are several ways in which the nature of the transport system which it already possesses may affect a country's transport investment policy. The existence of transport facilities widens the field of choice for investment decisions, since the improvement of existing services as well as the provision of new ones must be considered.

The potentialities for increasing capacity by improving existing facilities in ECAFE countries are considerable. Possible improvements relate both to 'track' (a single rail track may be turned into a double one, waterways may be deepened and roads widened) and to the vehicles or craft. Rail capacity may also be increased considerably by improved signalling methods. Some measure of the potentialities of improvements is given in the following table which compares maximum estimated capacities of existing routes in those parts of Laos, Thailand, Cambodia and southern Viet-Nam which fall into the Lower Mekong Basin area, with 'normal' capacities obtainable elsewhere.

Table 11.

ECONOMIC CAPACITIES OF ROAD AND RAIL SYSTEMS[a]

	No. of units	*Average capacity tons*	*Total daily carrying capacity tons*
Lower Mekong single track rail .	20 trains	500	10,000
'Normal' double track	200 ,,	800	160,000
Lower Mekong 5 metre road . .	1,000 vehicles	3	3,000
'Normal' 2 lane	6,000 ,,	15	90,000

[a] Lower Mekong figures taken from United Nations, *Development of Water Resources in Lower Mekong Basin,* Flood Control Series No.12, p.33. Hundred per cent load factors have been assumed. Thus, although total actual capacities would be less, the proportional differences would be the same. The low capacity of the lower Mekong five metre road was presumably a reflection of 'mixed traffic' conditions and of the inadequacy of the surface for heavy traffic.

None of the figures of 'normal' increased capacity are anywhere near the maximum capacities available from roads or railways. On stretches of the Japanese railways with a single track (and automatic block signalling), as many as 100 steam trains or 186 electric railcars are operated per 24 hour day. It is possible to run up to 400 trains a day on a double track with electrification, automatic control and continuous braking.[71] On a recent trial on the Indian South-Eastern Railway, a load of 6,800 tons was carried for a haul of 272 kilometres. The expected traffic flow on parts of the London-Birmingham motorway is 20,000 vehicles per day, and the existing flow (though this is certainly beyond the economic maximum) in some roads in towns in the ECAFE region may be greater than this. In 1956 there were roads in Tokyo, for example, which carried flows of 30,000 vehicles in a twelve hour day.[72] It can be seen from these figures that the improvement of existing facilities may well make as large a contribution to total capacity as the provision of a completely new service. On the other hand, the costs of improvement may not always be very much less than those of new construction. When governments are considering transport improvements, it is important that they should look a little further ahead than immediately foreseeable traffic needs. Several small improvements may often prove to be more costly than one major development. The direct conversion of a two lane road to a dual carriageway will, for example, be less costly than a 'two stage' improvement to three lanes and then to four.

An increase in the size of locomotives, craft and vehicles may mean not only increased capacity but also improved efficiency. This is particularly important in the case of craft and of road vehicles in the ECAFE region. The carrying capacity of craft increases with size more rapidly than water resistance and the cost of propulsion. Similarly, the cost of moving a barge or flotilla does not increase proportionately with its carrying capacity. Provided that enough traffic is available to obtain a good load factor, the cost per ton of carrying goods in a lorry decreases with the size of the vehicle.

The majority of ECAFE countries have imposed legal limitations on the laden weight of road vehicles. These restrictions may specify either the maximum laden weight of vehicles or maximum axle loads. Vehicles with tandem (dual) axles and articulated vehicles can carry heavier loads than ordinary four-wheel lorries and not increase road wear. Limitations on axle load are therefore preferable to those on gross laden weight. The application of the limits suitable for four-wheel lorries to tandem axle and articulated vehicles will restrict their capacity needlessly. It was pointed out, for example, that the Indian Motor Vehicles Act, which, as amended in 1956, fixes a limit of 18,000 lb. laden weight on all medium size vehicles but does not specify maximum axle loads, has discouraged the use of large-capacity articulated vehicles.[73] The United Nations

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[71] G. Fiennes (Eastern Region Line Traffic Manager, British Railways), "Future of Freight by Rail", paper presented to British Association, September 1959, reproduced in *Engineering,* 18 September 1959.

[72] Government of Japan, *Roads in Japan,* 1956.

[73] Nadirshah, "Road transport needs under the Second National Plan and some suggestions for its effective augmentation," *Transport Communications Monthly Review,* January 1960, pp. 143-4.

Conference on Road and Motor Transport which met in 1949 laid down in the Convention on Road Traffic standard permissible axle weights of 8 tons per most heavily loaded axle and 14.5 tons per most heavily loaded tandem axle group. Moreover, for articulated vehicles and other combinations, a scale was established with maximum permissible laden weights varying from 14.5 to 36.25 tons according to the distance between the extreme axles of the vehicle.[74] This Convention on Road Traffic has already been adopted by seven ECAFE countries or territories.[75]

The nature of the existing transport system may also partly determine the extent of the freedom of choice when a new investment is planned in an undeveloped territory. The question whether there is a railhead convenient to the borders of the area is an obvious example. The possibility of making a link between two hitherto unconnected parts of an existing rail, road, or waterway system may also be an important consideration. It could happen that, though the potential traffic of an undeveloped territory was most suitable for road transport, the opportunity of linking existing rail lines on different sides of the area might justify the construction of a railway instead of a road. Where a single transport method is used to serve a hitherto undeveloped territory, its suitability for all forms of traffic must be considered. Where there are already some existing transport facilities, the construction of another transport service for one specialized form of traffic may be more easily and readily justified. Thus, the construction of a canal may be a better economic proposition where its main function will be to carry bulk goods and where a railway or road already exists to carry general merchandize and passengers.

Conclusions

A vital factor in the allocation of investment between alternative transport methods should be the nature of the expected traffic flow analysed by length of haul, consignment weight, loadability, traffic density, and nature of route.

An estimate of the comparative costs of carrying a given traffic flow by different transport methods, though not easy to make, can be a valuable guide to rational investment decisions. A model for such a comparison is contained in appendix II.

While it is possible to vary the proportions of labour and capital used in the construction of railways, roads or waterways, the benefits resulting from the adoption of a labour intensive policy would have to be very great to compensate for any resulting delays or reductions in quality. There are fewer opportunities for substituting labour for capital in the operation of transport services, but they can be taken more readily with less likelihood of any harmful consequences. It is unlikely that the adoption of a labour intensive policy will have any influence on the choice between alternative transport methods.

Technological developments must result not only in a shortening of the life of individual pieces of equipment but also at times in the need to abandon complete 'units' of transport. Publicly owned parts of a country's transport system should not be artificially insulated from the consequences of technical change.

In most ECAFE countries, investment in improving existing transport facilities would yield very considerable returns, and must be considered as an important alternative to investment in constructing new railways, canals or roads.

The conditions favouring investment in each of the main forms of transport may be summarized as follows:

Canals and waterways

The great advantage of natural waterways is that there are no construction costs (except in some cases those of dredging). Where the main traffic flow is of bulk goods, this will be carried most economically by water whenever a waterway exists which connects the appropriate places and which can accommodate craft of a reasonable size. Roads may be necessary to link agricultural producing areas with the waterway. In the present technical state of road and rail operation, it would be difficult to justify the building of a railway parallelling an adequate natural waterway.

It is unlikely that the construction of a canal would be the first choice for a transport investment to open up undeveloped territory because of the relative unsuitability of a canal for anything but large consignments of bulk traffic. A canal is now most likely to be justified as a secondary and specialized means of transport for bulk consignments of minerals, liquids and agricultural products.

Railways

It is possible to distinguish certain minimum requirements which need to be met before the building of a railway can normally be justified. There should be a basic flow of bulk commodities and a minimum total traffic flow. There must be some variation according to local circumstances, but minimum figures of 600-1,000 tons per day, at least 70 per cent (by weight) being bulk traffic (sent out in consignments of 20 tons or more), may be suggested.[76] The minimum length for the trunk haul should be about 80 km (though this could be shortened for regular flows of very large consignments of bulk traffic such as the output of a colliery or iron ore mine). The construction of a rail network as intensive as that which was developed in Western Europe and the United States of America in the nineteenth century is never likely to be justified in present day conditions.

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[74] *United Nations Conference on Road and Motor Transport*, 1949, Final Act and Related Documents, Annex 7, p. 48-51, Sales No.1960. VIII.2.

[75] These are: Cambodia, Ceylon, the Republic of China, Federation of Malaya, Indonesia, Singapore and the Republic of Viet-Nam.

[76] These figures relate to undeveloped territory and assume a reasonable period of time for the traffic flow to develop. A much larger traffic flow would be necessary to make the construction of a railway an economic proposition in an already developed area.

Roads

Roads provide a flexible form of transport, capable of meeting a variety of traffic needs such as small consignments of mixed traffic, traffic below the density required for railroads or below standard loadability and consignments sent on short hauls, or requiring speedy or door-to-door delivery.[77]

There are two additional points which may be made about road transport. First, the kind of traffic for which it is most suitable — consumer goods sent to a large number of destinations in small consignments—is likely to grow greatly in volume and importance with the development of a country's economy. Secondly, demands for passenger transportation by car, bus, and motorcycle mean that it is almost inevitable that all countries, in the ECAFE region and elsewhere, must eventually develop a road network, whether or not road transport seems justified economically as the best means of carrying the freight traffic of the area. Since roads remain free to all users, calculations about the desirability of constructing a railway must make allowance for the eventual development of road competition which will probably mean the loss by the railways of most general merchandise consignments. Furthermore, when roads are built primarily to carry goods traffic, the growth of passenger traffic, particularly of private motorcars, must be taken into consideration in making estimates of road capacities. It may be, as has already happened with motorways in some countries, that in future the use of some roadways will need to be restricted to specific types of traffic.

The logical development of a country's transport system must include some form of integration with the use of different transport methods for different parts of the haul of the same consignment. The use of road vehicles to collect and deliver consignments which are to be trunk-hauled by train is already established in Japan, India and elsewhere. But much greater advantages can be obtained from the various road/rail devices for which there is great scope in the region.

Finally, the great importance of a coherent national transport investment policy may be stressed. All governments, even those which prefer to adopt a 'laissez faire' policy towards economic affairs, must be involved in transport investment decisions. Most countries of the ECAFE region control railway undertakings; all are concerned with the provision of roads. Their taxation and licensing policies may have a vital influence on the local development of the transport industry. It is doubtful whether there is any part of the world today where private interests would be prepared to undertake major transport investment projects without at least the assurance of government approval and support. There can be little need here to demonstrate the fact that the provision of adequate transport facilities is an essential prerequisite of the economic development of any country. Since governments must inevitably influence transport investment decisions, and since transport is indeed the "key to progress", there can be few ways in which governments may help their countries more than by formulating a rational and comprehensive policy for transport investments.

Appendix I

Economic criteria for assessing transport projects[78]

This note is concerned with the appraisal of transport projects with a view to determining their economic soundness. It goes without saying that no transport project can be a sound investment, whatever its economic merits, unless it is also technically, financially and administratively sound. The following discussion deals only with the general criteria that should be considered in making the economic appraisal.

For the purposes of this note, a transport project is one for the construction (or major rehabilitation) of railways, roads, ports, inland waterways or airfields, including usually the procurement of transport on handling equipment, and terminal and other ancillary facilities. Such a project is appraised economically in the light of: (*a*) its investment cost to the national economy; (*b*) the resulting benefits to the national economy; and (*c*) the adequacy of the benefits in relation to the cost.

COST TO NATIONAL ECONOMY

Evaluating the investment cost to the national economy is more than an arithmetical exercise. Realistic cost estimates of the project itself, prepared by competent engineers, are an indispensable first step. However, (*a*) it may be impossible to realize the potential benefits of the project without substantial investment in other transport facilities which are not part of the project, and/or (*b*) the investment in the project and related transport facilities may be part of a larger investment for productive facilities or social overhead capital, or both.

A common type of project is one for investment by a government, a municipality, or a public authority, in the construction of roads, railway lines, ports, airfields or inland waterways. Before such public investment can realize its full usefulness, it must usually be supplemented by private investment for the provision of additional facilities and equipment such as, for example, trucks and buses, specialized rolling stock, aircraft, freight and passenger vessels, or cargo-handling equipment, as the case may be. The project cost alone is therefore only a partial measure of the cost to the national economy; what is needed is the total outlay for transport facilities. This can be estimated in most cases within acceptable margins of error.

Frequently the project under consideration will be a developmental one in the sense that the transport facility gives access to a new mine or manufacturing plant or opens up a new productive region. The cost/benefit analysis is very simple where, for example, a specific railroad or port, or both, are to be built as part of the development of an iron ore or manganese deposit or of an aluminium or fertilizer plant. In such a case, the transport facility is a direct adjunct of the industrial facilities; there is no separate transport project as such, but instead a transport component of an industrial project, and the economic appraisal is based on the economic costs and economic benefits of the project as a whole.

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[77] Roads can also often carry very heavy indivisible loads, such as boilers and transformers which it would be physically impossible to carry by rail. This may be a matter of no small importance where the development of such heavy industrial plant as a steel works or a power station is anticipated.

[78] Prepared by Arthur Wubnig of the Transport Division, Technical Operations Department, International Bank for Reconstruction and Development and issued as working paper, E/CN.11/DPWP. 6/L.7 for the sixth session of the Working Party on Economic Development and Planning.

Complicated problems of a conceptual nature may arise where, for example, a road or railway is to be built or a river made navigable to open a new region whose productive potential is not utilized or underutilized because of lack of transport. In such cases, the cost of building the railroad or highway, or of making the river navigable, is one element of a larger complex of public and private investment for such things as farms, grain silos, food processing plants, brick works, irrigation canals, etc., for social overhead capital such as housing, schools, water supply, hospitals, etc., and for transport facilities including the new route, plus the needed vehicles, handling equipment and terminal facilities not part of the project. Where transport projects are a mere adjunct of regional development, they should not be credited with the full potential benefits from a total investment which ordinarily would amount to many times the cost of the railroad plus its rolling stock, or of the highway plus its fleet of motor vehicles. Some crude approximation of the total investment has to be worked out, and some reasonable assumptions have to be made for imputing a proper share of the benefits to the transport facilities.

Artificial exchange rates are another complicating factor, since they distort the true (present) costs of the project and are an unreliable basis for assessing its true (future) benefits and debt burden. For example, governments which use multiple exchange rates as an instrument of trade policy sometimes allot foreign exchange — for imported goods and services — to their State Railroads, highway departments, port administrations, canal authorities, etc., at much cheaper rates than those granted to exporters on the proceeds of their sales abroad. The nominal cost of the project in such cases will differ from its cost to the national economy by the amount of the indirect subsidy, and there will be a material under-statement of the cost of the project in terms of future debt service on funds borrowed abroad. Allowance should be made for these factors.

Finally, various technical adjustments are necessary to establish even nominal costs. Proper allowance must be made for interest during construction and for surveys, design and supervision; for pre-construction research and planning costs; and for labour, price and foreign exchange contingencies during the construction period. Part of the cost of some works which must be built all at once, if they are to be useful at all, may have to be treated as a deferred cost of future traffic, e.g., breakwaters for a port which will be expanded in successive phases, or the roadbed of highways which will be built by stage construction.

Benefits to National Economy

Every transport project yields its own type and amount of economic benefits. The nature, incidence and timing of such benefits will differ with the type of project as, for example, between an inland waterway system in Western Europe, a railway in Latin America or Africa, a port in the Middle East, or a road in South-east Asia or Central America. The benefits from transport projects can nevertheless be classified in several broad groups, some of which overlap others.

New transport facilities can and do induce production for market by opening up new areas, by stimulating farm-to-market, interregional and foreign trade, by promoting a shift from subsistence to cash-crop agriculture, or by serving as an essential adjunct of new plants and mines. The addition to the national income in each case can be computed, and reasonable assumptions should be made by which to allocate a proper share of these benefits to the project.

Transport facilities can and do reduce costs of inland haulage, cargo handling, ocean and air carriage, i.e., enable given amounts of traffic to be carried or worked at less cost per ton or ton-km, per passenger or passenger-km. It is the real cost savings of labour, materials and equipment which have to be assessed. This is no easy task, since the nominal costs may not give proper weight to depreciation or interest charges, may be distorted by direct or indirect subsidies to particular means of transport, or may reflect charges for social welfare and national defence which are extraneous to transport.

Transport facilities can and do save time, reduce or eliminate waste, diminish fatal accidents and property damage. Such benefits can be assessed by various measures, e.g., interest savings on the reduction in needed inventories for a given amount of trade; the market value of perishables safeguarded from spoilage, infestation or rodents; lower insurance premiums for third-party liability and for casualty losses. The entire gain in such cases is properly attributable to the transport project alone; little or no other investment will be needed, as a rule, to realize the full benefits.

Transport facilities can and do result in higher prices to producers, lower market prices for consumers, wider profit margins for carriers and handlers, larger tax yields to the government and municipal entities. They thereby affect personal and corporate income, family finances and government revenue in ways which tend, by and large, to stimulate production and to increase standards of living.

Finally, transport projects can and do facilitate better town planning, the relocation of industry and agriculture, and the decongestion of heavily built-up areas. These benefits are the most difficult of all to evaluate, but are often very important reasons for executing a project.

It is clear that computing the costs and benefits of transport projects is neither a simple nor a clear-cut procedure. Nevertheless, the analysis has to be made; otherwise there would be no economic criteria at all, and every transport project would have to be regarded as being as good as any other.

ADEQUACY OF ECONOMIC BENEFITS IN RELATION TO COST

The last problem is to determine whether the project promises to yield an adequate economic return. This is by no means equivalent to evaluating its investment return to the transport enterprise (if any) charged with the capital cost. The forecasted earnings out of revenue from a new railway line, toll road, port, or airfield, may be inadequate for reasons extraneous to the usefulness of the project to the national economy; e.g., inefficient organization and management of the transport enterprise; rate-making restrictions imposed by the government; social insurance laws tending to inflate labour costs; a government policy of pricing transport services so as to subsidize heavy industry, basic agriculture, particular productive regions, or particular economic groups. In all these cases, there should be an investigation whether through appropriate policies, the financial return to the enterprise can be raised in order to avoid it becoming a financial drain on the rest of the economy.

There are no self-evident or indisputable reasons for holding that the economic return on a project is adequate because it equals or exceeds some particular rate, such as yields on mortgages, bonds or shares in the country concerned, the profits earned by private enterprises, the cost to the government of borrowing funds at home or abroad, the productivity of investment in other sectors of the economy, or even the economic return on similar transport facilities elsewhere in the world.

The nature of the benefits, not merely their amount, has to be considered. For example, railways, roads or ports tending to stimulate production for export might rightfully be given priority over transport projects yielding internal benefits in countries where small export volume is the main obstacle to development. An under-developed country under acute, lasting balance-of-payments pressure might rightfully choose to invest, as between expanding its rail network or building new highways, in the alternative which will require the smallest ultimate expenditure of foreign exchange for vehicles and parts, fuels and supplies, interest and amortization. Individual governments will give different weight for good and sufficient reasons to such diverse benefits from transport projects as increased realization prices for producers, larger profit margins for carriers, or higher standards of living for low-income groups.

Thus, there is no ready, fixed formula for assessing the adequacy of the economic return from transport projects. As a rough-and-ready answer, the new facilities should be able to yield a sum of economic benefits over their useful life equal to or larger than their original cost plus reasonable return. The principle is clear, but its application to particular cases will be affected by complicating factors such as the value which a particular society assigns to future benefits compared with current costs, and a desire to distribute income in a given way among industries, regions and groups or to use means of transport for realizing non-economic objectives of public policy.

It is difficult in all cases (and may be impossible in some) to decide whether a given return is economically adequate. However, the return itself can be calculated if the full project costs are known and if the imputable benefits are such as lend themselves to measurement.

Each project will consist of particular facilities with a definite useful service life; the annual benefits, taken over the average useful life, will work out at a definite yield on the project cost, and this yield—whether 10 or 15 per cent annually, or any other figure—can be compared with, e.g., the economic return of other developmental investment.

Appendix II

Cost comparison model

In order to make a calculaton of the relative costs of moving traffic by different transport methods, it is necessary to make estimates about the nature of a future traffic flow and of current cost levels. The comparison here is between road and rail transport, but if slightly adapted, it could be used for comparing inland waterways with either road or rail or both.

The traffic and cost estimates required are set out below, with symbols allotted to each, and with the values used in a subsequent example.

TRAFFIC ESTIMATES

	Symbol	*Example estimate*
Total modal daily traffic flow	W	1,600 tons
Total peak daily traffic flow	$W + W_p$	2300 tons
Modal daily tonnage outwards (from B, road/rail-head in newly developed territory to A, connexion with existing transport network)	W_o	900 tons
Modal daily tonnage inwards	W_i	700 tons
Length of trunk haul; rail	D_t	160 km
road	D_r	170 km
Turnround time (i.e. time between successive loaded journeys of train or road vehicle): rail	J_t	24 hours
road	J_r	24 hours

	Symbol	*Example estimate*
Capacity of one trainload	V_t	800 tons
Capacity of one vehicle	V_r	10 tons
Number of wagons per train (average)	k	45
Attainable train capacity (i.e. capacity X load factor)	V_{ta}	400 tons
Attainable road vehicle capacity	V_{ra}	7 tons
Tonnage transhipped (at both terminals) originating at A: rail	W_{tyA}	200 tons
road	W_{ryA}	50 tons
Tonnage transhipped originating at B: rail	W_{tyB}	250 tons
road	W_{ryB}	70 tons
Length of life of:		
locomotive	L_{tp}	40 years
road vehicle	L_{tq}	15 years
wagon	L_r	8 years

COST ESTIMATES

	Symbol	*Example estimate*
Total construction costs per kilometre (rail double track; road 7 metre carriageway): rail	${}_{1}E_{t}$	$250,000
road	${}_{1}E_{r}$	$150,000
Cost of unit of equipment:		
locomotive	${}_{2}E_{tp}$	$ 80,000
wagon	${}_{2}E_{tq}$	$ 2,000
road vehicle	${}_{2}E_{r}$	$ 8,400
Cost of maintenance (ten year average) per kilometre: rail track	${}_{3}E_{tf}$	$ 7,500
road	${}_{3}E_{rf}$	$ 4,500
Cost of maintenance of equipment (ten year average): locomotive	${}_{3}E_{tgp}$	$ 8,000
wagon	${}_{3}E_{tgq}$	$ 300
road vehicle	${}_{3}E_{rg}$	$ 1,260
Average cost of transhipment (at both terminals) per ton: rail	${}_{4}E_{t}$	$ 2.24
road	${}_{4}E_{r}$	$ 0.84
Average cost of trunk haul per kilometre: rail	${}_{5}E_{t}$	$ 14.0
road	${}_{5}E_{r}$	$ 0.281
Rate of interest payable on loan at the time of construction	x %	5%

From these estimates the cost comparison can be made as shown below.

COST COMPARISON

(*i*) *Construction*

Let total rail costs = ${}_{1}C_{t}$ and total road costs = ${}_{1}C_{r}$, then

$${}_{1}C_{t} = {}_{1}E_{t} \cdot D_{t}$$

$${}_{1}C_{r} = {}_{1}E_{r} \cdot D_{r}$$

(*ii*) *Equipment*

Let total number of trains (locomotives plus wagons) = N_t and total number of road vehicles = N_r, then, when $W_o > W_i$

$$Nt = \frac{W_o \cdot J_t}{V_{ta}} + \frac{W_i \cdot J_t}{V_{ta}} + J_t \frac{W_o W_i}{V_{ta}}$$

$$= 2 \frac{W_o \cdot J_t}{V_{ta}} \text{ or when } W_o < W_i N_t$$

$$= 2 \frac{W_i \cdot J_t}{V_{ta}}$$

$$N_r = 2 \frac{W_o \cdot J_r}{V_{ra}} \text{ or } 2 \frac{W_i \cdot J_r}{V_{ra}}$$

Let unadjusted cost of rail equipment ${}_{2}C_{tu}$ and unadjusted cost of road equipment = ${}_{2}C_{ru}$, then ${}_{2}C_{tu} = {}_{2}E_{tp} \cdot N_t + {}_{2}E_{tq} \cdot K. N_t$

$${}_{2}C_{ru} = {}_{2}E_{r} \cdot N_r$$

Let cost of rail and road equipment adjusted for peak demand needs = ${}_{2}C_{t}$ and ${}_{2}C_{r}$ respectively then,

$${}_{2}C_{t} = {}_{2}C_{tu} \times \frac{W + W_p}{{}_{2}W_o} \text{ or, where}$$

$$W_i > W_o, {}_{2}C_{tu} \times \frac{W + W_p}{{}_{2}W_i}$$

$${}_{2}C_{r} = {}_{2}C_{ru} \times \frac{W + W_p}{{}_{2}W_o}$$

(*iii*) *Maintenance*

Let total rail maintenance cost $= {}_3C_t$ and total road maintenance $= {}_3C_r$ then

$${}_3C_r = {}_3E_{tf} . D_t + N_t \, ({}_3E_{tgp} + {}_3E_{tgq} . K)$$

[where, for example, M1 = maintenance of one locomotive in year one and

$${}_3E_{tgp} = \frac{(M_1 + M_2 + \ldots M_{10})}{10} \quad]$$

$${}_3C_r = {}_3E_{rf} . D_r + {}_3E_{rg} . N_r$$

(*iv*) *Terminal handling costs*

Let total rail costs $= {}_4C_t$ and total road costs $= {}_4C_r$, then

$${}_4C_t = {}_4E_t \, (W_{tyA} - W_{tyB}) . \; 360$$

$${}_4C_r = {}_4E_r \, (W_{ryA} + W_{ryB}) . \; 360$$

(*v*) *Trunk haul costs*

Let total rail costs $= {}_5C_t$ and total road costs $= {}_5C_r$, then

$${}_5C_t = {}_5E_t . \; 360. \; D_t . \; N_t$$

$${}_5C_r = {}_5E_r . \; 360. \; D_r . \; N_r$$

(*vi*) *Depreciation*

Let total rail costs $= {}_6C_t$ and road costs $= {}_6C_r$, and assuming that maintenance is such that the length of life of rail track and road = oo, then

$${}_6C_t = \frac{{}_2E_{tp} . N_t}{L_{tp}} + \frac{{}_2E_{tq} . K. N_t}{L_{tq}}$$

$${}_6C_r = \frac{{}_2E_r . N_r}{L_r} = \frac{{}_2C_r}{L_r}$$

(*vii*) *Interest*

$$\text{Rail} = \frac{x \, ({}_1C_t + {}_2C_t)}{100}$$

$$\text{Road} = \frac{x \, ({}_1C_r + {}_2C_r)}{100}$$

Then the total comparative costs are:

$$\text{Rail} = \frac{x \, ({}_1C_t + {}_2C_t)}{100} + {}_3C_t + {}_4C_t + {}_5C_t + {}_6C_t$$

$$\text{Road} = \frac{x \, ({}_1C_r + {}_2C_r)}{100} + {}_3C_r + {}_4C_r + {}_5C_r + {}_6C_r$$

This method of comparing the costs of alternative transport projects is a compromise between what is possible and what is desirable. The 'costs' compared are not total costs as they would be measured either by the accountant or by the economist, but a collection of those partial costs and activity costs where a meaningful comparison seems possible. The main elements of cost omitted are those of administration, terminal collection and delivery, terminal handling (apart from transshipment), documentation and claims. In these cases, errors of estimation are likely to be large, and true differences between the costs of alternative systems would be small. The collection and delivery of parcel consignments, for example, would be carried out by road vehicles and it would make little difference whether these were operated by the railways or in connexion with a long distance road haulage undertaking. It would be extremely difficult to determine what is the generally expected road/rail relationship between the level of cost for such matters as damage claims, or documentation.

The comparison is based on the expected traffic flows in the tenth year after construction. The choice of the tenth year is arbitrary, a shorter period (six years was used in the Nigerian cost comparison)[79] would make estimation easier but mean that there might be considerable potential transport demand undeveloped, and *vice versa*.

A major simplification in the model is the elimination of all intermediate collection and delivery points. The inclusion of these would not be impossible in an actual comparison, but cannot conveniently be shown in the general formula.

Another simplification is the assumption that the estimated traffic flow would be the same, whichever form of transport was used. In an undeveloped territory, the type of industry developing might be affected to a limited extent by the transport method available, and a more refined analysis would be obtained by taking account of this consideration. It is also assumed that road and rail costs of 'surplus' equipment for use during breakdown or maintenance periods would be the same.

The method of calculating the number of locomotives, wagons and road vehicles required rests on the assumptions that the marginal cost of adding extra rail wagons to a locomotive (up to capacity) is nil, that there is a regular traffic flow which must be moved in each twenty-four hour period, and that variation in loadability will affect rail and road equally. The method of calculating the number of vehicles or trains required necessarily involves a rigidity of working which would not be found in practice. The estimate of the 'attainable' capacity of a 'trainload' or road vehicle would, like the volume of consignments needing to be transshipped, be strongly influenced by the nature of the expected traffic flow, and would rise with increases in the proportion of mineral traffic. In calculations of the number of complete trains required to be operated, an arbitrary figure (say one-half of the difference between attainable capacity and actual capacity) would have to be fixed as the minimum 'surplus' tonnage (after complete trainloads have been made up) which would necessitate the running of one more train.

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[79] Emerson, *op. cit.*, p. 121.

Seasonal variation in demand is reflected only in the total cost of equipment. A more refined analysis would also allow for the influence of demand peaks on maintenance and depreciation costs. It is assumed that estimates of traffic flow will be made in the form of a frequency distribution (daily traffic flows and number of days occurring) and the modal rather than the mean daily flow is used to give the best measurement of 'normal' non-peak demand.

In estimates of trunk haul costs, there are many refinements (such as the distinction between mineral and merchandise trains) which could be made in the cost comparison if the data were available. But the model, as it stands, makes allowance for the main cost variables which would need to be considered in a choice between building a road or a railway.

The model is illustrated below by examples, but the figures, it must be emphasized, though based where possible on actual costs, contain an arbitrary element, and do not necessarily reflect any real life cost relationship to be found in ECAFE countries.

Rail construction costs $({}_1C_t) = 250{,}000 \times 160 = \$40{,}000{,}000$

Road construction costs $({}_1C_r) = 150{,}000 \times 170 = \$25{,}500{,}000$

Number of trains (N_t) $\frac{1800}{400} = 4.5$, taken as 5

Number of vehicles (N_r) $\frac{1800}{7} = 258$

Unadjusted rail equipment cost $({}_2C_{tu}) = 5 \times 80{,}000 + 2{,}000 \times 45 \times 5 = \$950{,}000$

Unadjusted road equipment cost $({}_2C_{ru}) = 258 \times 8{,}400 = \$2{,}167{,}200$

Adjusted rail equipment cost $({}_2C_t) = 950{,}000 \times \frac{1600 + 700}{1800} = \$1{,}213{,}900$

Adjusted road equipment cost $({}_2C_r) = 2{,}167{,}200 \times \frac{1600 + 700}{1800} = \$2{,}769{,}200$

Rail maintenance costs $({}_3C_t) = 7{,}500 \times 160 + 5\,[8000 + (300 \times 45)] = \$1{,}307{,}500$

Road maintenance costs $({}_3C_r) = 4{,}500 \times 170 + 1260 \times 258 = \$1{,}090{,}080$

Rail transshipment costs $({}_4C_t) = 2.24 \times 360\,(200 + 250) = \$362{,}880$

Road transshipment costs $({}_4C_r) = .84 \times 360\,(50 + 70) = \$36{,}288$

Rail trunk haul costs $({}_5C_t) = 14 \times 360 \times 160 \times 5 = \$4{,}032{,}000$

Road trunk haul costs $({}_5C_r) = .281 \times 360 \times 170 \times 258 = \$4{,}436{,}900$

Rail depreciation costs $({}_6C_t)$ $\frac{80{,}000 \times 5}{40} + \frac{2000 \times 45 \times 5}{15} = \$40{,}000$

Road depreciation costs $({}_6C_r) = \frac{8400 \text{ X } 258}{8} = \$270{,}900$

Rail interest charges $= \frac{5(40{,}000{,}000 + 1{,}213{,}900)}{100} = \$2{,}060{,}695$

Road interest charges $= \frac{5(25{,}500{,}000 + 2{,}769{,}200)}{100} = \$1{,}413{,}460$

The total comparative costs in this example are therefore:

Rail = \$7,803,075

Road = \$7,247,628

Though only by a fairly narrow margin, road transport would thus be the low-cost service in the circumstances represented by these traffic estimates and cost figures. The lower rail trunk haul costs (which, in terms of capacity ton kilometre costs were —

Rail = \$ .0175 per capacity ton kilometre

Road = \$ .0281 per capacity ton kilometre),

and equipment costs were overbalanced by lower road transshipment and construction costs and by the better road load factor (rail = 50 per cent, road = 70 per cent).

For a longer haul, rail would be more likely to be the cheaper service because trunk haul costs would become a larger part of total costs, and the rail advantage per capacity ton kilometre would become greater. A growth in the size of the traffic flow would tend to increase the relative importance of equipment and trunk haul costs, and thus to improve the comparative position of rail.

If the traffic flow was composed of minerals or other traffic not needing transshipment, the difference between road and rail costs would be narrowed, the total comparative costs being:

Rail = $7,440,195

Road = $7,211,340

If the railway could achieve the same load factor as road vehicles, it would become the cheaper service, the total comparative costs being:

Rail = $6,224,924

Road = $7,247,628

If, as is likely with mineral traffic, the railway combined the advantages of a better load factor with the elimination of transshipment the comparative cost figures would be:

Rail = $5,862,044

Road = $7,211,340

Finally, if the traffic flow was made up almost entirely of general merchandise consignments, all these being transshipped (at both terminals) when sent by rail, but only 10 per cent needing to be transshipped from one road vehicle to another, then the road advantage would be increased, the revised figures being:

Rail = $8,730,495

Road = $7,259,724

IV. FINANCING OF TRANSPORT DEVELOPMENT[80]

In a sense the question of raising finance for development is common to all the sectors of the economy. But in the case of transport it merits a separate consideration on several grounds. First, because of certain special features of transport investment such as large magnitude and long waiting periods, the transport sector has become, especially in the ECAFE region, a typical field where mixed economy is in operation. Second, the fact that the transport ministries or departments earn revenue raises the question whether they should be self-supporting or whether they should be assisted by the treasury. Third, transport services being basically essential for the development of the whole economy, governments are required to construct and maintain roads and waterways although the transport services are usually operated by private companies. Besides, they are often called upon to assist transport equipment industry in a variety of ways. This gives rise to important issues relating to the taxation of the users of roads and waterways as well as the best forms of giving financial assistance to the industry manufacturing transport equipment.

The object of this section is to discuss these and other policy questions relating to the provision of adequate finance for transport development. Attention will be focussed on the two main questions: (*i*) whether the nationalized undertakings should be completely self-supporting in respect to all expenditures including their developmental needs or whether a part of their expenses —capital and current—should be borne by the general tax-payer; and (*ii*) whether the revenue collected from the various taxes, levies and other charges imposed on the users of roads and inland waterways should be correlated with the expenditure on the construction and maintenance of roads and inland waterways. As a preliminary background for the discussion of these questions, the section begins with a brief description of the special features of transport investment. This is followed by a discussion of the methods and problems of financing nationalized transport undertakings especially railways. Next sub-section considers the methods of financing construction and maintenance of roads and inland waterways, traffic on which is mostly in the hands of private enterprise. It also contains a brief mention of problems connected with the financing of industries manufacturing transport equipment. Finally, there is a discussion of the role of external assistance in developing various transport facilities.

Special features of investment in transport

It is difficult to conceive of economic development without the prior existence of a reasonably well-knit transport system. In fact it is a fundamental pre-condition for the take-off of an economy,[81] transport has to be developed before the full demand from the developing industry becomes apparent. This characteristic of transport gives rise to many difficulties. First, owing to the uncertainties of estimating demand which has not fully emerged, the planning of appropriate investment in transport becomes very difficult. Second, in the absence of precise economic criteria, transport is developed as a matter of deliberate policy, often based on a variety of political, social and strategic considerations, and it is extremely difficult, if not impossible, to separate economic from non-economic objectives. The development of transport in pursuance of non-economic objectives may result in providing services which cannot be utilized fully over an inordinately long period of time. Third, if investment in transport results in the withdrawal of funds from other activities, growth in other fields may be held back, which in turn may slow down the demand for transport.

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[80] Revision of E/CN.11/DPWP. 6/L. 6, a paper prepared for the sixth session of Working Party on Economic Development and Planning by the ECAFE Secretariat.

[81] While discussing the case of nations that were "born free" Rostow writes, "... the process of their transition to modern growth was mainly economic and technical. The creation of the pre-conditions for take-off was largely a matter of building social overhead capital — railways, ports and roads — and of finding an economic setting in which a shift from agriculture and trade to manufacture was profitable." W.W. Rostow, *The Stages of Economic Growth,* Cambridge University Press (1960), pages 17-18.

In contrast to many other fields of economic activity where investment can proceed by small increments, investment in transport is lumpy. It is also capital intensive. "Railroads need, on the average, about four times as much capital per dollar of annual revenue as manufacturing enterprises do".[82] Even the modernization of railways involves large outlays for rail, locomotives, rolling stock, yards, terminals and workshops. Similarly, the construction of main highways and bridges and building of aircraft and ships are very expensive. Because of the large size of investments, governments are often required to undertake investment themselves, as in the case of railways or in the construction of roads and canals, or they are required to give some assistance to private entrepreneurs if the transport development schemes are entrusted to the private sector. An important aspect of the large-size investment in transport is that it is not only large in relation to other industries or in terms of minimum units and lumpiness, but that it claims a fairly large share—about a quarter—of the total investment.[83] Further, this share tends to be larger and more significant in the early stages of development, when attention has to be concentrated on completing the pre-conditions of the take-off.[84]

The large magnitude of investment is but one, and perhaps the least important, cause which has led governments to play an important role in the development of transport. Long "gestation" and "infancy" periods[85] of the developmental projects constitute by far the most important consideration which impel governments to assume considerable responsibility for the development of transport. When the waiting period is long and the capital needed for the project large, it becomes difficult to raise funds from private sources, especially in poor countries where savings are limited and the desire for early returns is great. The return from investments in transport is frequently indirect, and often slow to develop. Benefits are realized in the form of new crop lands made available to the farmer, or by the extension of the radius of the market for perishable goods. These and similar results of transport development are not fully accounted for on the balance sheets of transport agencies. It is true that traffic and revenues may be expected to rise, but the economic justification for making such investments is reflected more accurately in higher national output, larger incomes, and more adequate diets. These take a pretty long time to develop to a degree which will bring in full returns on investment. The income during the "infancy period", therefore, usually falls short of the aomunt needed to meet current maintenance, operating cost and fixed interest charges. This obligation raises the problem of securing additional funds during the long "infancy period". Since money has to be found at a time when the project is not paying its way, the government is not only required to step in to lend its prestige for the borrowing of the money, but also to resort to taxing the general public for this purpose.[86]

The three special features — building ahead of demand, large magnitude of investment and long "gestation" and "infancy" periods—described earlier are common to transport projects all over the world. To these may be added one more feature which is of particular significance to the countries of the ECAFE region. Most of the countries of the region are dependent on industrially advanced countries — mostly outside the region—not only for the supply of initial machinery, but also for the technical know-how required for their transport development programmes. Very few countries of the region have undertaken to manufacture transport materials and equipment, and, in view of the capital-intensive character of such projects, the initial requirements of foreign exchange are likely to be fairly substantial. Further, as transport develops, the necessity to import railway equipment, motor vehicles, petroleum, aircraft, ships, pipe and replacement parts is likely to place an ever increasing strain on the very scarce foreign exchange resources of many countries. Programmes of investment in transport must, therefore, be scrutinized carefully in order to ensure the availability of foreign exchange required not only for the start of the project, but also for the import requirements of the growing volume of transport after completion. Otherwise, there is the danger of prolonging the "infancy period" of the project during which the demand will remain below capacity, necessitating continuous assistance from the government, and giving rise to partial utilization which can result in tremendous waste of the country's resources.

Public financing — nationalized transport

The central problem in financing transport is how to make possible the heavy outlays required to rehabilitate and modernize existing facilities, to built the new extensive facilities required, and to operate and maintain these basic services. This focal problem raises many important issues which require careful consideration. For example, whether and to what degree transport should be self-supporting? How should the rates, taxes and other charges for transport facilities and services be determined and to what extent should they be relied upon to finance the various transport requirements? The nature of these questions as well as the approach to them differs considerably from one transport agency to another, and for this reason it is convenient to consider the problems of financing each mode of transport separately. This section deals with the problem of nationalized undertakings, mainly railways.[87]

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[82] William L. Grossman, *Fundamentals of Transportation*, Simmons Boardman Publishing Corp., New York, 1959, page 263.

[83] *Supra*, p. 16, footnote 1.

[84] "The conventional mode of dealing with capital formation in terms of national income aggregates does not usefully illuminate the crucial role, in the pre-conditions period, of the build-up of social overhead capital. Where data exist on the level and pattern of capital formation in pre-take-off societies — and for the take-off as well — it is clear that a very high proportion of total investment must go into transport and other social overhead outlays." W.W. Rostow, *op.cit.*, page 24.

[85] In the case of transport development projects, it is possible to distinguish between three periods: "the period of actual construction, which is sometimes called the gestation period; then a period of infancy in which the project has not enough work to do to make it pay; and finally the stage of maturity marked by sufficiently full utilization to make profitable operation possible. The biological analogy . . . is not strictly appropriate. The project itself does not change from the infancy period to the stage of maturity: it is the economy that grows up and so enables the project ultimately to become a paying proposition." Ragnar Nurkse, "International Finacing of Public Overheads" in *Lectures on Economic Development*, The Faculty of Economics (Istanbul University) and the Faculty of Political Sciences (Ankara University), 1958, page 184.

[86] The implications of government responsibility in this respect and the methods adopted to discharge it are discussed in some detail in the following two sub-sections.

The case of railways differs from other modes of transport in two important respects. First, the same enterprise has to undertake both the functions of construction and maintenance of railroads and of running goods and passenger trains from day to day. Second, railways in most countries are owned and operated by the government. The most important issue, from the point of view of financing, relates to the appropriate rate policy to be pursued by the transport undertaking, i.e. whether the rate policy should aim at making profit, just covering all the expenses, or whether a part of the total expenses should be borne by the general tax prayer. Before we discuss these issues, however, it seems desirable to give a brief account of the organization and financial position of the railways in the ECAFE region.

ORGANIZATION

Railways in most of the ECAFE countries are nationalized, although a few lines continue to be operated by private enterprise. If nationalized, railways can be either a departmental undertaking or a separate corporation owned by the government but whose operations are conducted strictly on a commercial basis. From the point of management and day-to-day operations, the latter of the two forms of organization can claim the advantages of a considerable degree of flexibility, independence from government red tape, and of equal treatment with private companies. From the point of view of financing, a departmental undertaking would be treated as a government department, and as such it would not be subject to rules, regulations and laws applicable to commercial concerns. For example, such an undertaking would be free from corporation tax, income tax, capital gains tax and the like. It may also have some advantages when acquiring land and buildings. Its accounts would be submerged in the accounts of the department in charge of the undertaking and, unless special provision is made, a separate cost-and-benefit analysis of the undertaking would not be easily available. Its rate policy and finances including budgetary provision would be subject to the usual procedure of treasury and parliamentary control, and its working and relations with employees would be governed by normal government rules and procedures, which may place the undertaking at some disadvantage.[88] On the other hand, a separate government-owned corporation could enjoy a large amount of freedom in management, and its separate accounts, probably included in its annual report, would permit a close scrutiny of the economic working of the undertaking. If registered under the companies law, it would be subject to all taxes and provisions of the law, and in this respect would be on the same footing as other companies. Since the corporation is government-owned, some control by Parliament and government department or ministry is inevitable, but it can be free from day-to-day treasury control and can have a fairly large degree of flexibility in actual operation,[89] especially when it is self-supporting or making a profit.

In China (Taiwan), Indonesia, southern Korea and Thailand, railways are run like a departmental undertaking. But in Ceylon, India and Pakistan, a form of organization has been evolved which is similar to a separate corporation in many respects. The accounts of railways are separate, and they exercise a certain degree of freedom in their working and operations. The Malayan railways also now are organized more or less on the same lines. However, these organizations differ in one important respect from the "corporation" type described here. Since any excess of income over expenditure accrues to the government revenues, they are not required to pay income tax or other taxes on their income or profits like other private companies. In Japan, the government railways which were financed under a special account of the government budget were reorganized, in 1949, into a public corporation called the Japanese National Railways. The entire capital of the corporation, invested by the Government, is subject to the supervision of the Ministry of Transportation. The corporation, however, is distinguished from corporations registered under the Civil Code and the Commercial Code, its budget being submitted to the National Diet for approval and its President being appointed by the Cabinet. The accounts of the corporation also are subject to Audit by the Government Audit Board. In spite of the establishment of a separate corporation, the railway organization in Japan seems similar to the type of organization in other countries mentioned before.

EARNINGS AND EXPENDITURE

Broadly speaking, it appears that, except in Burma, India, Pakistan and Thailand, railways are incurring a deficit, although they are of recent origin in Ceylon, the Federation of Malaya, Indonesia and the Philippines. In prewar days the railways were making a profit in most cases.

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[87] In Indonesia, the shipping services carrying insular traffic have been nationalized. Much of the discussion about the rate policy is applicable to the nationalized shipping undertaking also. The basic difference, however, is that, in the case of shipping companies, the waterways are provided almost free of cost by nature. As such, the case for dividing expenses between the users and the general tax payers is basically weak.

[88] The following quotation gives an excellent account of the various handicaps from which a departmental undertaking may suffer. "These . . . relate to the necessity of observing government procedure regarding such matters as (i) supplies (Tender Board Regulations of the Financial Regulations); (ii) appointment and discipline of staff (Public Service Commission Rules); (iii) provision and use of money (Treasury instructions) and (iv) pay and conditions of service of staff (Treasury rules and instructions). All these factors mean in the first place delay, which is expensive. Next, the decision that is ultimately given may not be the decision that is locally expected or that is most salutary." Government of Ceylon. *Report of the Commission on Government Commercial Undertakings*, pp. 73-74.

[89] It should, however, be remembered that "Behind all these controversies about the financial status of public enterprises, their capital structure, and so on, lies the essential problem of making these bodies self-supporting. Until they become so, they are inevitably dependent, either directly or indirectly, on annual budgetary allocations. Under such circumstances, it becomes very difficult for them, whatever "autonomies" they may enjoy in theory, to make genuinely independent decisions in financial matters of any moment, for they do not know with any certainty, until the beginning of the financial year, how much money will be available to them; and it appears that a considerable amount of time and energy is expended by some top-level public enterprise executives in trying to influence the size of their budgetary allocation. Moreover, as long as the State is providing money, it suffers the temptation to control the enterprises in ways which are hardly compatible with their proper financial freedom." A. H. Hansen, *Public Enterprise*, International Institute of Administrative Sciences, Brussels (1955), pages 420-421.

Throughout the world, railways frequently operate at a deficit, and the losses registered in some of the ECAFE countries constitute by no means a special feature. A variety of reasons has contributed to the appearance of deficits in the recent past. First, in many countries of the region—especially those dominated by foreign rule—railways were built at a time when strategic goals or the export of raw materials to the metropolitan countries were the principal factors in determining railway location. These locations were sometimes ill-suited to the immediate needs of internal development. Second, the lack of proper up-keep and maintenance is partly due to the damage caused during the war and to the difficulties of obtaining adequate finance and equipment for maintenance and replacement experienced during the post-war years. Third, increasing road competition has increased the difficulties of the railways in the region. To these must be added rising costs and the constant pressure exerted on governments, on the one hand, to give higher wages and benefits to the employees and, on the other hand, to prevent a rise in railway rates commensurate with the rise in their costs or in the general price-level.[90]

FINANCING AND PRICING POLICIES[91]

Whatever the causes of railway deficits, the most important question before the countries of the ECAFE region, bearing in mind the urgent needs of economic development in general and transport development in particular, concerns the most appropriate financing and pricing policies for rail transport in future. Before proceeding with the discussion of specific policies, we should try to clarify one general issue which is fundamental to all financing policies and which appears repeatedly in the discussion of specific policies. The plea that nationalized undertakings should be formed into public corporations and run on a strictly commercial basis is founded on the economic principle that the consumers of a commodity should pay for its supply. If the nationalized undertaking is not run in this way, there is a danger that the general tax payers may be required to pay for a commodity which they do not consume. Such a state of affairs can lead to uneconomic utilization of resources. Hence, the pricing policy of a nationalized undertaking should be such that it will enable the undertaking to meet all its costs — both recurrent expenses and fixed costs. This, however, seems a distant goal for most of the ECAFE countries which are in the early stages of economic development and whose transport will take a long time before it starts to pay its way. Hence, it will be impossible, at least in the near future, for the countries of the region to run a nationalized undertaking such as the railways on strict commercial principles and to insist on covering all costs. In the circumstances, governments will inevitably offer financial assistance to the transport undertaking, thus compelling the general tax-payer to bear a part—and in many cases a substantial part—of the total expenses incurred. In such cases, the burden imposed on the general taxpayer is justified on the ground that the benefits of transport development are not at all confined to actual users. For example, the opening of a railway line may lead to the establishment of a factory or factories which provide employment, and to higher incomes for the people in the region, a large majority of whom may not be the direct users of the railway. There is no way of precisely measuring such indirect benefits and of deciding the share of the total expenses to be borne by the railways, and by the treasury or the general tax-payer. Hence, the actual division of the share has to be decided upon by each country in a pragmatic way, after consideration has been given to all the relevant facts. However, the following two guiding principles should receive the highest consideration: (*i*) In view of the urgent necessity of augmenting public revenue as much as possible in order to finance the general development, the share of the treasury should be fixed at the lowest possible level. (ii) The agreed division should be reviewed from time to time with a view of reducing the share of the treasury and reaching the final goal of making the undertaking self-supporting. Against this background, only three specific price or rate policies need be taken up for discussion: (*i*) no-profit-no-loss price policy; (*ii*) marginal cost price policy; and (*iii*) subsidized rates policy.

(*i*) Since transport constitutes a basic utility for general economic development, it is naturally felt that it should be run on the no-profit-no-loss principle, at least when it is nationalized. Stated in general terms, this objective seems beyond dispute.[92] But strict adherence to such a policy may not be possible in the early stages of development when demand is most likely to fall short of the supply for a fairly long period. In such circumstances, a rate structure based strictly on costs may prove detrimental to the agricultural and industrial development of the region served by the railways. Again, the principle of no-profit-no-loss can be followed only with reference to a long period which combines bad years with good years, and the difficulties in deciding upon the length of such a period are genuine and not easily solved. But they can be overcome in a pragmatic and flexible way. Next comes the question of what items should be included on the cost side with which revenues are to be equated. Besides maintenance, replacement and other operating costs, should the earnings be expected to cover a provision for pensions and annuities, interest on loans and other fixed capital charges? In a strict commercial sense, all these ought to be included on the cost side. But, as already indicated, it would not be feasible in the initial stages to charge a price which would cover that cost without any adverse effect on the general economic development of the country concerned, and a share of the total expenses will have to be borne by the treasury. It should, however, be stressed that, so long as income is not sufficient to cover all its expenses, the undertaking must be regarded as running at a loss in the strict commercial sense.

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[90] "As a government department, the railway has had to act as a model employer . . . Of recent years government policy has purposely maintained low fares and rates with increases few and far between." International Bank for Reconstruction and Development, *The Economic Development of Ceylon,* The Johns Hopkins Press (1953), page 631.

[91] The discussion is mainly confined to the question whether the price policy should aim at covering all charges including capital charges or not, since this question has an immediate bearing in the financing of transport. An analysis of the various aspects of transport pricing policies is being undertaken by the ECAFE secretariat at the request of the Inland Transport and Communications Committee for consideration at its ninth session (February 1961).

[92] The sort of price policy that a public corporation ought to follow can be stated simply . . . it should make neither a loss nor a profit after meeting all capital charges; . . . (this) rule . . . rests on a two-fold foundation. In the first place to do otherwise is to contribute either to inflation or deflation . . . The second reason . . . is to prevent over-or under-expansion of public corporation industries." W. Arthur Lewis, "The Price Policy of Public Corporations" in *Problems of Nationalized Industry,* George Allen and Urwin Ltd. (1952), pages 181-182.

Once the concept of cost is narrowed down to exclude capital charges or some other charges, and a comparison is made between operating cost and revenue, the case for a rate policy that yields substantial, if not maximum, returns or profits becomes quite strong. For, in the first instance, the surplus, unless it is very substantial, cannot be claimed as net profit, and could only go towards alleviating the burden of the general tax-payer. Second, even if the surplus is assumed to be so substantial as to constitute profit, there would be a case for retaining it rather than revising the rates downward. For, at a time when the crucial problem is to step up the saving rate and to meet the financial requirements of the plan by every means at the disposal of the government, any *profit* made by the nationalized railways would be an important source of revenue. The higher price which the users of the transport system are required to pay can be looked upon as a tax levied upon them. There would be some justification for it, as in the case of all other taxes that may be raised for developmental purposes.

(*ii*) Recent attempts by economists to explain and clarify the principles which should govern the output and use of factors of a nationalized undertaking have given rise to a lively and long drawn out controversy regarding the correct pricing policy of public utilities.[93] This controversy is extremely complicated, and involves so many issues which are not purely economic that it is not permissible, within the scope of this paper, to do full justice to them. However, it might be useful to have a brief discussion of the suggested pricing principle, mainly with the object of pointing out certain implications of adopting that principle in practice. The principle suggested is that a nationalized undertaking should be operated in such a way that the price charged for the product is equal to its marginal cost. In order to make its implications clear, this policy may be compared and contrasted with the conditions of perfect competition, on the one hand, and those of monopoly, on the other. Under perfect competition, the price equals not only marginal cost and revenue but also average cost and revenue, and hence gives the best economic use of the available resources. Under monopoly, equality between marginal cost and marginal revenue determines the output, and the price is more than both the marginal and the average cost, resulting in monopoly profits. Whether the suggested principle of pricing according to the marginal cost will result in profit or loss will depend upon the particular conditions under which the nationalized undertaking is working. If it is working under conditions of diminishing returns, (i.e. rising average costs) the marginal cost will more than cover average costs, and profits will emerge. But, if the nationalized undertaking its working under increasing returns (i.e. decreasing average costs), the marginal cost will be less than the average cost, and losses will appear. This latter case rather than the former one is relevant to the nationalized transport undertakings in the countries of the region. Since both the economy and the services are in an early stage of development, the transport services are not being fully developed, and in all probability they are operating under increasing returns. Indeed, the orthodox plea for nationalizing public utilities, transport, electricity, gas, water supply, etc. rests mainly on the grounds of competition being impossible when average costs are falling.[94] In the circumstances, the acceptance of the policy would inevitably result in losses. In order to make good these losses, the State will have to resort to imposition of new taxes. Without entering into the controversy regarding the justification for such taxes and the addition to or subtraction from social welfare resulting from them, we may question whether it would be wise and practicable for the countries of this region to adopt a rates policy which will incur losses and require additional taxation.[95]

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[93] For the literature on this subject see Abba P. Lerner, *The Economics of Control*, The Macmillan Company, New York (1947); Oscar Lange, *On the Economic Theory of Socialism*, The University of Minnesota Press, (1935); H. Hotelling, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates", *Econometrica*, July, 1938; J.E. Meade and J.M. Flemming, "Price and Output Policy of State Enterprise (A Symposium)", *Economic Journal*, December, 1944; "The Marginal Cost Controversy", *Economica*, August 1946; A.M. Hendersen, "The Pricing of Public Utility Undertakings", *The Manchester School of Economic and Social Studies*, No.3, 1947; B.P. Beckwith, *The Marginal Cost Price Output Control*, Columbia University Press, 1955.

[94] "But both forms of competition (i.e. one firm extending into the area of a neighbouring supplier or through the competition of suppliers trying to attract consumers to their area) are too indirect and uncertain to be relied on, and even at the height of laisser-faire opinion in this country (i.e. United Kingdom), these industries were subjected to various measures of price regulation. The reason then for regulation copy was that competition was impossible because the average cost of each producer was falling." A.M. Hendersen, "The Pricing of Public Utility Undertakings". *Manchester School of Economic and Social Studies*, No.3, page 224.

[95] While there seems to be a general agreement among writers on the subject that the adoption of the marginal-cost price policy will necessitate additional taxation, opinions differ widely as to the justification and desirability of such taxation. The following quotation is given as a specimen of the strong views held on this question.

"Finally, it is sometimes argued that, in industries where average cost falls as output extends, the industry should charge less than average cost and receive a subsidy. The idea is that its price should not exceed the cost of supplying marginal units so that no person should be denied a supply who is willing to pay for it the marginal cost of letting him have it. This argument is the economists' pet.

"It is quite fallacious. It is quite true that no person should be denied a supply who is willing to pay its marginal cost, but it does not follow from this and is quite untrue, that the consumers as a whole ought to be subsidized. Let us take an arbitrary example. Suppose that a new religious sect is formed, one of whose principles is that the devotees should live on the top of the nearest mountain in sight. And suppose that on arriving there they find the north-east wind rather chilly, and decide to protect their settlement with a tall wall. Once the wall is built the cost of sheltering behind it is nil, and what the economist's principle tells us, quite rightly, is that no member of the sect should be forced to build his house in front of the wall simply because he cannot afford to contribute to the cost of building or maintaining the wall. But the principle does not tell us that the rest of society must supply the sect with the bricks, cement and labour required for the wall free of charge ... This applies equally to any other fixed establishment. Once it is erected, no consumer should be excluded who is willing to pay the marginal cost of use: but between them, the consumers of this commodity, as a group, must pay the rest of society for labour and materials supplied by the rest of society to set up the establishment. What the economists' principle supports is not a public subsidy, but a system of charging what the traffic will bear, so that consumers contribute to fixed costs according to their capacity to pay."

W. Arthur Lewis, "The Price Policy of Public Corporations," in *Problems of Nationalized Industry*, George Allen and Urwin Ltd. (1952), pages 187-188.

(*iii*) Sometimes, a belief that low rates will stimulate traffic and further economic and social goals has resulted in the persistence of the low rates and the deficits as a matter of conscious policy on the part of the government. Such a policy may be justifiable and indeed necessary in the very initial stages of development when the government has to provide numerous incentives to persuade private enterprise to establish new industries. But care and vigilance in this matter are essential because the policy of charging uneconomically low rates can have a number of undesirable results. In the first place, such a policy will have an inflationary effect unless it is deliberately offset by some other action of the government. Any persistent deficit means that the national undertaking is putting more money into circulation by paying for services, materials, etc. than the money it is taking out of circulation by charging for its services. Continued low rates may also result in over-expansion of the national undertaking, with consequent adverse effects on its management and efficiency. Or, a low rate policy may make it difficult to provide modern equipment and satisfactory service. If the deficit is allowed to persist by means of additional taxation, transport is being subsidized in order to subsidize industries in a general and indiscriminatory manner. Hence, a deliberate policy of charging uneconomically low rates could be justified only in exceptional circumstances and for a short while.

It will be clear from the foregoing brief discussion of certain specific rates policies that each one has some merits and some drawbacks and that the net advantage, if any, depends largely upon the particular conditions. Without, therefore, attempting to generalize as to the desirability of one policy or the other, we may next direct attention to the appropriate methods of financing the nationalized transport undertakings when the treasury is required to provide finance for them.

Consistent with the various rate policies discussed earlier, finance from the government may be divided into three categories: finance required (*a*) to meet any capital charges on the fixed capital already invested; (*b*) to cover any gap between current expenditure and income; (*c*) to pay for developmental expenditure. Each of these categories will be discussed separately.

(*a*) The capital already invested might have been raised either from the surpluses appearing on the revenue account or from public loans raised by the government from time to time. In view of the manner in which railways came to be developed in this region, it is doubtful whether a clear cut division of the funds raised as between loans and revenue either exists or is possible. Where it is possible, the payment of interest on such portion of the capital as raised by loans should appropriately be charged to the railway accounts and treated as an item of current expenditure. As regards the funds financed from the general revenue, taxes are raised on a *non quid pro quo* principle, and the government is under no obligation to make any financial return to the tax-payer. The nationalized undertaking, therefore, could conceivably be excused from the usual commercial obligation of having to pay some dividend on the share capital acquired from the tax-payer.[96]

(*b*) The gap between current expenditure and income will appear either temporarily owing to a drop in traffic or to a sudden rise in cost, or—more permanently—when the low-rates policy is being pursued deliberately. Whatever the causes, it is clear that the payment made by the government to cover the gap amounts to, and should be treated as, an annual subsidy, and as such it should be met from taxation. This would provide for a periodic review of the working of the national undertaking by the government and parliament, and may be helpful in ensuring that such a subsidy is kept to the minimum and to the shortest period possible.[97]

(*c*) Of the various methods of financing the developmental expenses of a nationalized undertaking, only two may be discussed here. The undertaking could be asked to earn a profit and thus finance further expansion without recourse to the market. This method would be analogous to the ploughing back of undistributed profits of a business enterprise which now constitutes the largest source of saving. The arguments for adopting such a method of saving may be quite strong in respect of many nationalized undertakings. But, in the case of transport undertakings, the method may not be found suitable, especially in the early stages of development when the provision of a basic facility such as transport as cheaply as possible is considered essential. From this point of view, it may be found advisable and desirable for the government to assume responsibility for financing the developmental expenses directly in the form of loans. This method may also prove to be consistent with the procedure of the planned economy in which allocations are made to each sector, after consideration is given to the over-all needs of the plan as a whole.

Since the developmental expenditure is likely to be quite substantial, the government will have to raise public loans to finance it. This could be done, either as a part of the general loans programme of the government, or by allowing the public undertaking—if constituted as a separate corporation—to raise its funds in the open market. The first procedure is on the whole preferable. It is probable that, if the corporation is permitted to raise loans independently, it may be required to offer a higher rate of interest, which will raise the cost of running the undertaking. Moreover, competition among different government agencies for funds in the capital market is hardly desirable. Lastly, once latitude is given to the undertaking to raise funds, some freedom to raise them according to its own ability would inevitably be granted. In such a case, it would be difficult to avoid the tendency for the developmental expenditure to be somewhat independent of over-all plan needs. This may result in permitting transport to develop in a manner not strictly consistent with the needs of the over-all plan and may result in haphazard economic development and some waste of resources.

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[96] However, as pointed out earlier, if circumstances permit, the nationalized undertaking should make a profit and help the government to raise money for the financing of general economic development. It should be borne in mind that the profit thus earned would constitute an element in additional taxation without any direct relation to the capital invested from the general revenue.

[97] The gap between current expenditure and income could be financed, besides by taxation, by 'deficit finance'. But this would lead to inflation, which would tend to raise the costs and increase the gap, thus aggravating the problem in the long run rather than mitigating it.

Public financing — private transport

This sub-section deals with the problems of financing roads, inland waterways and the industries manufacturing transport equipment. In contrast to the case of railways, the actual operation of transport services both on roads and inland waterways is, except in mainland China, mainly in the hands of private enterprise. Similarly, most of the undertakings manufacturing various kinds of transport equipment are owned and managed by private companies. But all these private undertakings require financial assistance from the government for one reason or another. The problems and methods of financing these industries from public funds will be discussed here.

ROADS

In recent years, expenditure on roads has shown a tendency to increase very rapidly. In 1958, many countries were spending four to five times more than in 1950. The great significance attached to the development of road transport in relation to other forms of transport is evident from the high share of expenditure alloted to it in the various plans of the ECAFE countries.[98] For instance. more than half of the total expenditure on transport is claimed by roads in Afghanistan, Ceylon, Iran, Japan and Thailand; the share varies between 40 and 50 per cent in the case of China (Taiwan), Indonesia and the Philippines. In other countries, the share of expenditure on roads is about one third of the total transport expenditure, with the notable exception of India where the percentage share of roads is 17.4 per cent and 18.4 per cent respectively in the second and third plan. The funds required for this purpose are substantial and are mainly spent on the construction and maintenance of roads. The actual transport service in carrying goods and passenger traffic is provided by private companies.[99] The income from such services does not accrue to the government treasury. The question arises, therefore, whether the development of roads should be financed in the usual manner from the general budget, or whether special taxes and duties should be levied on the users of roads in order to offset the expenditure on the construction and maintenance of roads.

The examination of this case can best begin with the statement of a few points concerning the basic philosophy of public finance. The orthodox theory of public finance considers that the organization and running of government provides certain benefits such as protection, security, justice, which are both indivisible and vital for the existence and prosperity of a society. The cost of running the government, therefore, has to be paid by the society in the form of taxes, duties and other charges, notwithstanding the fact that each and every member of the society receiving these benefits is not in a position to pay the taxes. Hence taxes are levied independently of the benefits derived by each individual in accordance with their ability to pay. *Non quid pro quo* is the underlying principle for all taxes. All revenue should be treated as one single fund and allocations of expenditure should be made as required for each type of service. In other words, the case for each department should be decided on its merits and no attempt made to match the revenue earned by the department with its expenditure.

An attempt to separate user taxes would therefore have certain implications which are repugnant to the basic reasoning of the general theory of public finance. In the first instance, it would introduce the unsound principle of treating each ministry's income separately and allowing the ministry to use it as such. Second, this policy would introduce the principle of a *quid pro quo* in some form or other. Third, the attempt to divide sources of income according to services rendered would result in endless difficulties in arriving at a just and equitable solution. Finally, the introduction of the principle, but only for roads, would deny Parliament an opportunity to weigh the claims of road transport against other competing needs.

Notwithstanding these arguments, the practice of relying on user taxes, at least to some extent, to finance roads has gained currency in western countries, and the example is being followed in some of the countries of the ECAFE region also.[100] The basic reasons for such a practice are many and varied.[101] But the most important are two: (*i*) the usual procedure of annual budgets, which is appropriate for other government departments, is not quite suitable for the transport department, because the department is required to undertake and execute projects usually of much longer duration. For such projects, the assurance of continuity of funds is essential both from the point of view of planning and implementation. There is frequently the danger that the funds unspent by the end of the year may lapse altogether and not be made available for use during the following year. The inability of the Transport Ministry to spend the allotted amount fully within the short period of a year may also give rise to misgivings and misdirected criticism which are likely to have adverse effects on the working of the department. (*ii*) The practice provides a more equitable cost basis for road-rail competition. In the case of the railways, the users are required to bear, to a very large extent, the expenses of building up a railroad. If a similar procedure is not followed, in some form or another, in the case of roads, there is the danger that the State may continue to give concealed subsidies to one form of transport which would thus be able to engage in unfair competition with other forms of transport, especially rails.[102]

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[98] See *supra*, table 5, p. 11.

[99] In some countries (e.g. Ceylon, India and Pakistan) of the ECAFE region, passenger traffic is being taken over by the government. But in the majority of the ECAFE countries, the entire road traffic is carried out by private companies.

[100] Japan is a notable example of this practice. But separate road development funds are also found in other countries such as India and the Philippines.

[101] "It is theoretically justifiable to consider revenues from all tax sources as accruing to the general fund and to make allocations therefrom on the basic needs regardless of source. In practice, the retention of taxes from special sources (such as vehicle registration, tolls, motor fuels, air port/sea port use, and special services rendered) in special funds has many advantages. Accounting is facilitated, budget controls are more effective, programme planning is easier and there is less temptation to divert use-tax funds for low priority and general government current expanditures". Standford Research Institute, *An Economic Analysis of Philippines Domestic Transportation,* Vol. I. page 78.

The first of the two reasons loses much of its force and importance in the context of planned development. A plan usually provides investment targets for a long period, and, once the plan is approved, there should be a reasonable assurance that funds will be provided within the framework of the plan. However, where a plan is not in existence or is not formally approved, or where the ruling party is not very strong, the creation of a separate fund or budget may have certain unquestionable advantages.[103] The second argument really supports the case for levying taxes on the users of the roads and not so much for earmarking them separately for expenditure on roads. In many countries of the region, the competition between road and rail is very keen. It seems reasonable that the users of roads should be taxed and made to pay at least a portion of the cost of road construction—in the same way as users of railways. Only when the provision of the two transport services has been placed on an equal footing is it possible to consider in what cases the roads are in a position to give real competition, and if so whether any additional regulatory measures are called for. But all that is necessary for this purpose is a regular periodic comparison of construction and maintenance costs of roads with the revenue from taxes from the users of roads; it would not be necessary to earmark revenue specifically for the establishment of a special and separate roads fund. The case for such a fund will have to be considered with reference to the particular conditions relating to planning, budgetary controls and the strength of the political parties in a country.

It may, however, be pointed out that the establishment of a separate "road fund", even when found desirable, is neither free from difficulties nor does it automatically ensure rapid and sound development of roads.[104] Once the decision to have a separate road fund is taken, the first difficulties are encountered in choosing the taxes which are to be earmarked for the fund. Normally, vehicle registration fees, driving licence fees and petroleum taxes are regarded as users' taxes. But this list is by no means definite, and it tends to grow in practice. For example, countries which import petroleum usually levy an import duty on petroleum. That duty may, therefore, be regarded as a tax on petrol to be earmarked for the fund. But, if import duty on petrol could be regarded as a tax on users of road transport, why not import duties on automobiles and their spare parts? Similarly, if excise duty and sales tax on petrol is regarded as a tax on users of roads, why not similar charges in the case of automobiles, motor cycles and bicycles? The list of such claims tends to be ever widening, and it becomes more and more difficult to draw a line.[105]

Whatever the decision on the definition of user taxes, the second set of difficulties arises when the government has to decide whether all the revenue collected from the chosen taxes should be earmarked for the fund or whether a part of it should be credited to general revenue account. It is obvious that opinions will vary; a good case can be made out for each one of them.[106] The actual division of the revenue from the user taxes between the exchequer and the road fund

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[102] As pointed out in the previous sub-section some of the capital cost of building up railways is usually borne by the general tax-payer, and the application of the same principle of division to the cost of providing roads would be sufficient to ensure an equitable cost basis for competition without any need to equate income from users taxes with expenditure on roads.

[103] In Japan, the "Law for Temporary Measures concerning the Sources of Funds for the Improvement of Roads" came into force in July 1953. According to the provision of this law, the revenue from the gasoline tax was to be used for improvements; this arrangement resulted in the provision of substantial and steadily increasing funds, as may be seen from the following figures:

Expenditures by Sources *(In million yens)*

	1954	*1955*	*1956*	*1957*	*1958*
Gasoline Tax	15,845	25,953	34,665	34,236	35,596
General Income . .	1,406	2,926	10,344	9,424	9,973
Local Government's Funds	12,820	13,575	21,608	20,718	21.582

Source: "Roads in Japan", Government of Japan, Road Bureau. Ministry of Construction.

[104] The creation of a separate road fund can at best ensure the availability of funds and not their best use as may be seen from the following: "It is clear that Camarines Sur (including Naga City) has a greater maintenance appropriation than has neigbouring Albey, and that its roads should be expected to be maintained in better condition. Such is not the case, however . . . It is apparent from this one example — and many more could be cited — that the use made of maintenance appropriations is at least as important as the amount of funds available, and that, if all district engineers obtained as much maintenance per peso expended as do the best ones, Philippine roads would be much better than they are today." Stanford Research Institute, *An Economic Analysis of Philippine Domestic Transportation*, Vol. IV, pages 40-41.

[105] "The normal sources for financing of road works from state or local budgets can be grouped under the following heads: (*a*) Income tax; (*b*) Tax on fuel; (*c*) Federal surtax on fuel; (*d*) Tax on motor vehicles; (*e*) Tax on transportation; (*f*) Tax on driving or circulation licence; (*g*) Tax on tyres; (*h*) Tax on transfer of motor vehicles; (*i*) Customs duties on imported vehicles and accessories of spare parts for same; and (*j*) Negotiation tax. "Professor Giuseppe Ugo Papi, "General Report on Financing of Roads", *Highway Financing*, International Federation World Meeting, (1955), page xi. To this should be added the system of tolls which has been used in several countries, notably in Japan during recent years.

[106] One opinion on the question is as follows: "The Indian Roads and Transport Development Association has always held the view that all forms of transport should be taxed on the following principle: (i) A tax for the general revenues, its incidence being the same as that on any other essential commodity with no element of luxury or protective tariff in it. This may be called the "Duty Element" and (ii) a tax sufficient for the development of the industry itself, i.e. roads in the case of motor transport, on a long-term plan for the benefit of the community. This may be called the "Development Element". The duty element of the taxes should be earmarked for the Central Exchequer and should consist of: (i) an import duty on component parts of private cars, accessories and motor spirit on the same scale as for essential commodities, which is 30 per cent at present, and (ii) an import duty on components of transport vehicles and their accessories on the same scale as for railway imports which varies from 10 to 18.5 per cent at present, say, 15 per cent average. The Development Element of the taxes should be put into the road fund and should consist of (*a*) tax on motor vehicles, and (*b*) a full tax on motor spirit in addition to the import duty of 30 per cent." Indian Roads and Transport Development Association Ltd., "Financing of Roads," *Highway Financing*, International Road Federation World Meeting, October 1955, pages 11-12.

is a matter that can be best settled in a pragmatic manner after taking into consideration the particular facts regarding the taxes proposed to be earmarked and the probable income from them, and so on. The following are a few general principles that may be usefully adopted in levying the user taxes and in arriving at a just sharing of the revenue derived from them between the treasury and the "roads fund:" (*i*) The ultimate aim should be that the revenue from the user taxes should cover not only maintenance but also capital charges; (*ii*) in the initial stages, when the treasury is called upon to bear a part of the total expenditure, the basis accepted for financing railway expenditure should also be adopted in the case of roads; (*iii*) since the revenue from the user taxes is subject to fluctuations, the division of this revenue in a certain predetermined proporotion is to be preferred to the division of revenue by tax heads.

The third set of difficulties arises when the collection from user taxes is substantially below the cost of providing roads. In such circumstances, the treasury will have to be approached for a contribution from the general revenues, and all the inconveniences of the annual budgetary procedure and controls cannot be avoided. This is likely to be the case in most ECAFE countries where, in the initial stages of development, revenue from user taxes is likely to be substantially less than the expenditure.[107] In such circumstances, there will be an inevitable tendency to equate expenditure on roads to such revenue, if not on an annual basis at least on a periodic basis. If such a tendency prevails and becomes a tradition, it will have far-reaching repercussions. If the revenue from users' taxes is found to be inadequate for the proposed expenditure, there will be an attempt to either raise the level of such taxes or reduce the expenditure on roads. The attempt to raise taxes beyond a certain level[108] may raise the cost of transport and defeat the general policy of helping rapid economic growth with cheap and adequate provision of basic facilities like transport. Conversely, an attempt to curtail expenditure on the improvement of roads might result in the non-attainment of transport target or a downward revision of transport targets which may also hamper the general economic development.

In view of these difficulties, the best procedure in a planned economy would be to fix the transport targets in accordance with the estimated requirements of the growing economy and to ensure that transport is allotted funds as provided in the plan, rather than allow the targets or the achievement thereof to fluctuate in accordance with the fluctuations in the collection of user taxes. If such a procedure is adopted, the provision of the funds required for the development and maintenance of roads will be assured, and the need for the establishment of a separate fund obviated. However, where such a procedure cannot be adopted, the creation of a "road fund" may prove advantageous, especially if the tendency to equate road expenditure with the revenue earmarked for the fund is avoided. For instance, it may induce the government departments to weigh the costs of road projects against their revenue earning potentials. This may lead to a selection of roads and design aimed at maximizing economic justification. The toll finance which is in effect an extension of the special road fund idea may also prove a useful financing device, though to a limited extent, as is shown by the recent experience of Japan.

Although the case for the establishment of a separate roads fund may not seem to make a strong appeal especially in the circumstances prevailing in many ECAFE countries, the necessity of providing an equitable cost basis for road-rail competition remains. From this point of view, it seems necessary and desirable that a periodic and regular exercise should be undertaken to ascertain to what extent revenue from user-taxes covers the cost of roads and whether such revenue provides an equitable and just cost-basis for competition between rail and road. Such an exercise will also provide the governments with a good basis on which to judge whether they have done all that they could and must do in raising taxes from the users of roads.

INLAND WATERWAYS

The discussion of the various questions related to the financing of inland waterways may be divided under the three heads: (*a*) artificial or man-made waterways, (*b*) natural waterways and (*c*) ports.

Artificial waterways are practically non-existent in the ECAFE region, and any detailed discussion of the methods of financing them is not called for. It may, however, be mentioned that the problems in this case are analogous to those of road finance. The cost of construction being heavy, the probabilities of recovering them from the users are very limited. The cost has, therefore, to be met from the general revenues, at least in part if not fully. In order to create an equitable cost basis for competition with other forms of transport, it is necessary to levy as many charges as possible on the users of these waterways and thus ensure that the income from them is sufficient not only to recover maintenance costs but also capital costs, in the same manner as in the case of other forms of transport. Since the construction of such inland waterways is not undertaken on any significant scale, the case of creating a special development fund can hardly be made out. However, the considerations outlined in favour of, and against, the creation of a special road development fund are also applicable to the establishment of a special fund for the construction and maintenance of artificial waterways.

Natural waterways are important in a number of ECAFE countries such as Cambodia, mainland China, India, Indonesia, Pakistan, Philippines, Thailand and southern Viet-nam. The chief task of maintaining these inland waterways consists of dredging operations and the provision of adequate landing and other facilities at the harbours. These services are generally provided by the government, and the main problems of financing relate to the methods of raising the revenue and providing funds in order to meet these costs. The provision of facilities at inland harbours can best be handled on a local basis. The expenses of such services are not likely to be very large, and they can be recovered by the levy of a small charge on the users of these services. The dredging operations are costly and capital-intensive, and usually require a separate organization. The countries of the region do not follow a uniform system in organizing and maintaining these services. For example, in some parts of India, the private transport companies are entrusted with this work and they receive financial aid from the government. In other countries, those functions are undertaken by the government itself. In most countries, various small fees and charges are levied on the users of inland waterways, and in some countries such as Thailand the income from such sources exceeds the cost of services. There are also examples where the income is less, and the deficit is made good by income from general revenues or foreign assistance.[109] In some cases a special fund has been created for this purpose; in others, provision is made from the general budget. By and large, however, it may be said that, whatever the actual system of operation, maintenance and conservancy are regarded as government functions, and the practice of levying charges on the users of these waterways is almost universally followed in the ECAFE countries. The problems of financing inland waterways are thus very similar to those of other forms particularly road transport.

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[107] Even in Japan where the provision of road improvement funds with gasoline tax revenue and the creation of toll road is considered "an epoch-making development in reinforcing the road funding system", the treasury is required to divert revenue from general taxes to the road funds, and "the amount of general tax revenue diverted to the road funds at present is deemed to be utterly out of balance with the gasoline tax paid by the automobile users and the increase in future appropriation is demanded." Japan Road Association, "Report on Financing of Roads", in *Highway Financing*, International Road Federal World Meeting, October, 1955, page 101.

[108] In this connexion, it is important to remember that expenditure on roads can reduce vehicle operating costs substantially. The road taxes levied are offset, at least partly, by savings in petrol consumption, tyrewear and vehicle depreciation. Hence the burden imposed by these taxes cannot be simply measured by the level of taxes.

PORTS

Ports are organized and managed either by (*a*) separate trusts, (*b*) railways or (*c*) governments themselves. All three types are to be found in the ECAFE region. For example, ports in India and Pakistan such as Bombay, Calcutta and Karachi are mainly managed by trusts. Port Swettenham in the Federation of Malaya is managed by the railways, and the ports in Indonesia by the Government. Whatever the type of management, the problems of financing the ports are essentially the same. The port authorities are usually permitted to levy a number of small charges on the users of the port facilities, and these are usually sufficient to meet the current expenditure of the port authorities. Sometimes, a conscious principle of "no-profit-no-loss" is followed in levying the various charges. The income from port dues in most cases constitutes only a small fraction of the total government revenues, and the chances of earning large profits, or of incurring losses requiring substantial subsidies are few. Hence, there can be no serious objection, on the grounds of orthodox principles of public finance, to the separation of port finance from the general budget, with the object of making port finance more or less self-balancing. This principle applies, however, to the current expenditure. It is obvious that, the developmental expenditure being heavy, the responsibility of providing it will have to be assumed by the government. But the funds could be raised and provided in the form of loans in order that the port authorities could be charged with interest on such loans from their revenue.

TRANSPORT EQUIPMENT INDUSTRIES

Industries manufacturing transport equipment, such as locomotives, ships, automobiles and aeroplanes, have been established only in a few countries of the region—Japan and India for example. In view of the heavy capital requirements of these industries, governments are called upon to provide assistance in a variety of ways such as protection, reservation of traffic to national shipping, guaranteed purchases of products and direct financial aid. Only the aid alone is relevant to the subject matter of this paper, although the other factors also have some financial implications, even if indirect. Since the industries manufacturing transport equipment outside mainland China are mostly in the private sector,[110] the financial assistance given to the private companies can be either in the form of loans—mostly long-term—or subsidies. Of these, loans are preferable, since they do not constitute any charge to the treasury and ultimately to the general taxpayer. The government can raise loans in the capital market and reloan a part of funds either at the same rate or even at a little higher rate of interest in order to cover any expenses incurred in such operations. When the money is recovered from the companies, the government can redeem its obligations to the public without any cost to itself. In such a case, the government only uses its prestige and guarantee in order to enable the private undertaking to acquire funds which would otherwise have been difficult to obtain. In contrast to a loan, a subsidy is not refundable, and would thus constitute a burden on the taxpayer. As such, the amounts would tend to be small, and most likely the subsidies would be given for short periods or for specific purposes. Hence, for large developmental expenditure, it would be easier and more reasonable to provide assistance in the form of loans. However, subsidies, given on an annual basis, provide an opportunity for the legislature and the government to examine the working of the recipient undertaking and to exercise control over it. From this point of view, that form of assistance may be preferred to loans in certain cases in order to help the undertaking sustain losses or cover specific items of expenditure, such as the introduction of certain welfare schemes or purchases of specific items.[111]

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[109] In Cambodia, for example, "the funds required for the dredging operations may be obtained from United States aid, the National Bank, or the National Fund for Equipment". "Government Organization to deal with Inland Waterway Transport and River and Canal Conservancy (as related to inland navigation) in Asia and the Far East." (Trans/Sub.3/14, 1959, page 5).

[110] In India, ship-building and the manufacturing of locomotives have been partly taken over by the Government. Where the industries are nationalized, the problems and methods of financing are similar to those discussed in the previous sub-section.

[111] "Practically all of them [state industries] require subsidies during their early years of operation, and some, of a really essential but inherently unprofitable character, may need to be supported over a long period. In such cases, it is important that the reasons should be clearly stated and that steps should be taken to prevent "feather bedding". The community would then know what financial sacrifice it was being called upon to make in the national interest, and have greater confidence that its money was not being squandered." A.H. Hansen, *Public Enterprise*, International Institute of Administrative Sciences, Brussels (1955), page 426.

Role of external assistance

Large investments, long gestation and infancy periods, and the necessity to provide finance with the least diversion of funds from other channels of investment have led countries all over the world to depend on foreign assistance for the development of transport, even in the nineteenth century. As a matter of fact, "international investment in the nineteenth century was mainly for the purpose of setting up public overhead facilities such as railroads. Of Great Britain's external investments outstanding in 1913, 30 per cent was in government bonds, as much as 40 per cent in railroad securities and 5 per cent in other public utilities, so that three-fourths of the total represented public or public utility investment".[112] This assistance was provided mainly to the colonies and the United States. Likewise, other metropolitan countries provided funds for building up roads in their colonies, and the volume of such assistance was quite large, even by present standards.[113]

The main change which has taken place, however, is that, while most of the foreign assistance in the nineteenth century was provided by private investment and generally in securities, the assistance received at present is mostly in the form of loans, grants, or technical assistance from international agencies or from governments.

EXTERNAL ASSISTANCE RECEIVED BY THE ECAFE COUNTRIES

During the past fifteen years, countries of the ECAFE region have received a considerable amount of external assistance through the various international agencies as well as from individual governments. Among the international agencies, the International Bank for Reconstruction and Development and the Colombo Plan have played a significant role, while the United States of America and the Soviet Union figure as donor countries.

Of the total loans of $4,759 million made by the World Bank till the end of 1959, Asia received $1,431 million, or 32.4 per cent of the total loans. The distribution of these loans, classified according to purpose, was as follows:

BANK LOANS CLASSIFIED BY PURPOSE
As of 31 December, 1959
(Millions of dollars net of cancellations and refundings)

Total: Asia	*1,431*
Total: Transport	*521*
Railroads	349
Shipping	—
Ports and waterways	80
Roads	72
Airlines and airports	6
Pipelines	14

It will be seen that about one third of the Bank's loans to Asian countries are for transport purposes—a good index of the role that the Bank is playing in developing transport in this region. The Bank's emphasis on development of Asian countries is of recent origin, and it is hoped that loans to Asia, for the developmental purposes in which transport may be safely predicted to rank first, will increase in the near future.

The assistance offered under the Colombo Plan scheme is in a variety of ways, and serves several purposes including transport. For example, one-third of the aid given by Canada to India is in the latter field. Australia has furnished rail rolling stock to Cambodia, the Federation of Malaya and India, and road building equipment to Nepal. India has provided technical and economic assistance to Nepal for the maintenance of roads and waterways. Japan, through its Export-Import Bank, has made a substantial loan to India for a variety of economic development projects, including railways.

The United States of America, the largest donor country participating in the Colombo Plan, provides assistance through a number of agencies such as the Export-Import Bank, International Co-operation Administration (ICA), the Asian Economic Development Fund, the Development Loan Fund and the Agricultural Trade Development and Assistance Act. A few examples of the assistance given by some of these agencies may be cited.

By 1958, Asia received half the total credits sanctioned by the Export-Import Bank. In Iran, training operations have been conducted for a large number of railway operating and maintenance personnel; the entire programme, involving Export-Import Bank funds of approximately $34 million, has already had a substantial impact on the operation of the rail system. A number of industrial loans have also been made in support of the transport industry.

Approximately 30 per cent of the total ICA obligations of $2,200 million, in the period 1955-1959, were for transport. Asian countries received $517 million for transport projects, out of a total of $659 million allocated to the region—or nearly 80 per cent. The distribution of ICA assistance among the several methods of transport in Asia and the Far East placed roughly equal emphasis on roads and railways. Railway projects absorbed $198 million, and roads $203 million. Water transport received about $27 million, and air transport $25 million.

Among the projects financed out of the Asian Economic Development Fund, mention may be made of the transport facilities designed to reduce the isolation of landlocked countries. In Nepal, a regional road programme has been designed to provide connexions with India. Five million dollars from the Asian Economic Development Fund has been made available over a three-year period, and these funds are being supplemented by contributions from both India and Nepal. Another regional transport undertaking has been aimed at the furthering of transit of freight from landlocked Afghanistan through Pakistan to the port of Karachi.

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[112] Ragnar Nurkse, *op. cit.*, page 183.

[113] "The (World) Bank has done very useful work, but the amount of its lending has been relatively small. Even if we include the loans made by the Export-Import Bank in this field (excluding postwar reconstruction loans to Europe) we find that in the last six or seven years the real volume of America's foreign lending for public and public utility investment has been much less than Britain's fifty years ago." Ragnar Nurkse, *op. cit.*, pages 197-198.

The Development Loan Fund (DLF) has allocated a very large part of its funds to transport. A $75 million DLF credit to India will be used for railway, road and cement projects. Of the total, a $25 million credit has been made for the import of truck, jeep, and bus components to be assembled in India. Another $40 million of imported structural steel and steel products will be used to assemble railway freight cars and passenger coaches.

The Soviet Union has granted financial and technical assistance for a wide variety of transport undertakings in the ECAFE countries, including Afghanistan, Burma, Cambodia, Ceylon, mainland China, India, Indonesia and Iraq. Soviet specialists have worked under an aid agreement with Nepal to construct 1,000 km of road connecting the eastern and western parts of the country. An economic and technical co-operation agreement has also been made with Indonesia for a 662-km highway, to be defrayed by the $100 million loan to Indonesia from the Soviet Union. A 750-km road in Afghanistan has also been undertaken. In Ceylon, Soviet aid has been made available for a tyre factory.

Appraisal of external assistance

It is a common feeling that, despite the increased efforts witnessed during the last decade to help the underdeveloped countries of the region in their economic development, the present volume of such assistance is small, and falls considerably short of the needs of the developing economies. Since dependence on such assistance is almost inevitable in the case of transport development, it is desirable to investigate the causes of the inadequacy of external assistance and the steps needed to improve the situation.

Lack of sound projects has sometimes been mentioned as a cause for the small volume of external assistance in relation to the existing demand. This lack may be due to several reasons. For one thing, a project has to be designed competently, comprehensively and in great detail if it is to be worthy of consideration by a lending agency such as the World Bank. The technical competence required for such jobs is often not readily available in the borrowing countries. This deficiency, however, could be overcome, to a certain extent, by importing the technical personnel from abroad, and the Bank is already active in this matter. Second, a transport project may not look sound from the point of view of repayment. This is a fundamental weakness of all transport projects which have to be undertaken ahead of demand. The servicing of debt during the infancy period is a heavy responsibility, and ways and means have to be found to help the debtor countries in this respect. If a system of co-operation could be worked out whereby a project could be considered and assisted by several international agencies simultaneously, an arrangement might perhaps be devised whereby loans, grants and technical assistance could be divided among the agencies in such a way that the burden of re-payment during the infancy period is reduced to the minimum. Third, it may be difficult to judge the soundness of a project in the absence of a systematic plan for economic development as a whole. This may be true in respect of the countries which have either no plan or only a partial plan. However, almost all the ECAFE countries have now formulated their plans, and the deficiency will gradually disappear as they gather experience in working out consistent multi-sectoral economic development plans.

The "specific project approach" adopted by the lending agencies has been sometimes thought to be partly responsible for the small volume of external assistance. It is conceivable that a flow of foreign assistance for a general purpose such as "transport development" would be larger and more helpful to the borrowing countries because of the greater degree of flexibility in utilizing such assistance. But it is difficult to work out a system for securing such a flow which would be satisfactory to both the lending agencies and the borrowing countries. The lending agencies such as the World Bank and Export-Import Bank are run on a commercial basis, and it may not be possible for them to lend money for general purposes without a close scrutiny of the specific project. The same is true, though to a lesser extent, of government aid. After all, the governments offering aid do so out of the public funds, and they are answerable to their own people and taxpayers. Specific projects and schemes can be more easily explained by governments to their legislators. Unless the lending agencies are completely reorganized, therefore, it will be difficult to give up the specific approach altogether. However, it is worth while considering whether the functions of the present lending agencies could not be enlarged in such a way as to permit lending, at least to some extent, to the governments for general developmental purposes on their individual security, just as ordinary banks extend credit on personal security without much insistence on specific projects. If such a procedure could be evolved, it might go a long way in helping the borrowing countries to overcome their difficulties during the long infancy periods of transport projects.

Further, mention may be made of the practice of the World Bank as well as the Export-Import Bank of limiting their loans to the foreign exchange component of a project. This practice is believed, and perhaps rightly so, to be one of the factors restricting the flow of external assistance. However that may be, the practice is open to certain criticisms. In the first place, lack of domestic finance may render ineligible projects that are otherwise sound and realistic. Second, a division of the cost of a project between national currency and foreign exchange is not hard and fast, and the debtor countries might be tempted to increase the foreign exchange component as much as possible. This course may lead to unnecessarily larger imports, and add to the cost of servicing debts. The concomitant need to raise domestic funds for a full utilization of the imports may also, in certain cases, cause diversion of funds from more urgent needs, which in turn may hinder the development of other sectors and thus aggravate the difficulties of the transport projects during the infancy period. In general, a foreign lending policy that neglects the concomitant needs for domestic financing may lead to the acceleration of domestic inflation and, in the final results, endanger the economic soundness of the whole operation.

The practice of limiting loans to the foreign exchange component may have its origin in the desire to induce the debtor countries to mobilize their domestic resources as much as possible. The desirability of such a drive is not to be denied. However, the adequate amounts of domestic and foreign finance required for the execution of a particular project are a matter which should be decided on the basis of the over-all assessment of available resources and requirements, as incorporated in a national economic development plan. This seems preferable to the present practice of treating the foreign exchange component of a project as the sole criterion for the amount of external assistance to be supplied.

Lastly, in evaluating the over-all economic effects of external assistance, we may raise the question whether the relative importance that is being given to transport development in the entire assistance programme is economically justified. Apart from the cases in which the particular direction of assistance is dictated by strategic and other non-economic considerations, the concentration of loans on transportation, largely railways, reflects the belief of a lending agency such as the World Bank that the development of these economic overheads is not only a necessary condition of economic growth as a whole, but is of paramount importance in accelerating the growth of other sectors. The expansion of the transport sector should therefore precede the development of other sectors. The justification of this priority lies in the external economies originating from the economic overheads. Another school of thought, however, would emphasize that transport development does not immediately raise income to a great extent, and that, although the existence of transport facilities is a prerequisite of the development of other productive industries, the two processes can in large part be concurrent. In view of the interaction between the sectors, it may be argued that the optimum use of foreign assistance funds would entail a shift in investment allocation as between the sectors in favour of more immediately productive investments. In all these questions of resource allocation, it is of crucial importance that the problems of transport development should be viewed in the broader perspective of economic development planning as a whole.

FINDINGS OF THE WORKING PARTY ON ECONOMIC DEVELOPMENT AND PLANNING (SIXTH SESSION)

The sixth session of the Working Party on Economic Development and Planning for Asia and the Far East was held at ECAFE Headquarters, Bangkok, Thailand from 27 September to 7 October 1960. The Working Party considered the problems of transport development in relation to Economic Development as a whole. The findings of the Working Party on the subject under consideration are given below.[114]

The present status and problems of transport

The Working Party was unanimous in stressing the vital importance of transportation as a key factor in economic development. The awareness of the essential role of transport in development planning was clearly borne out by the fact that during the last decade in almost all countries of the region as much as 20 to 40 per cent or more of total public developmental expenditures have been channelled into the transportation sector. The corresponding figures for private sector investment could not be assessed as sufficient information is lacking. Indeed, during the postwar years, the rate of increase in railway freight traffic and in the number of automobiles in the region compared favourably with other regions of the world, although the availability of all means of transport has remained very low on a per capita or per square kilometre basis. Comparisons in fields other than railway and air transport are, however, mostly no more than guess work, as basic statistical information is still conspicuously lacking. The Working Party noted these statistical deficiencies and recommended strongly that governments should increase their efforts in helping to fill the gaps, particularly those relating to the non-mechanized means of transport. The use of sampling methods offers an efficient and inexpensive way of acquiring data.

Many countries in the region have been faced with the problem of rehabilitating their transport systems from devastations and dislocations wrought by war and internal disturbances. This has been practically completed, although in some countries railroad mileage is still below pre-war levels and port facilities have not yet been fully restored. Several countries still have a large volume of obsolescent equipment, particularly in their railway systems which continue to be the main means of transport.

For most countries of the region, rail and road freight traffic combined showed a considerably higher rate of increase than the gross domestic product. Only in Japan, the most developed country of the region, did freight traffic rise more closely in proportion to the gross domestic product. In some countries (such as India, Pakistan, Ceylon and Japan) freight traffic has risen more rapidly than passenger traffic, while in other countries the opposite trend seems to have prevailed. The increase in passenger traffic was to a great extent centered around growing urban centres, mostly capital cities. Variations in the availability of the various transport means and in per capita traffic amongst the countries of the region were, however, great. They were conditioned largely by the stages of development, the size of the country, the geographical characteristics, the extent of urbanization, the commodity composition of the national product and so on.

Expenditure on transport and communications has been emphasized in the development plans of most countries of the region. Expenditure on railway and highway development as well as for port facilities generally represents the bulk of public investment in the transport sector, while road hauling and inland water transport have increasingly become an attractive field for private investment. In a number of countries, where high priority is given to transport, a significant part of investment was directed towards improving the quality and efficiency of existing facilities. Considering the heavy demands made on the transport and communications systems in these countries, it is felt that even larger amounts than those allocated in the plans, could have been usefully spent on transport development. The railways which carry the bulk of the goods and passenger traffic in some of these countries have been working under great strain in the last few years, and despite the heavy amount spent on the expansion of railway capacity and rolling stock, it seems unlikely that the pressure will ease in the near future. It is particularly necessary in such countries to give more attention to the development of alternative means of transport and more specially to road transport.

Although in many countries the available statistics or estimates show that road mileage has grown only slowly since prewar years and that paved highways constitute a very low percentage of the total length of roads, the rate of increase in automotive transport tended to outstrip by far that of railways as well as that of inland waterways. From 1943 to 1957, the number of commercial vehicles increased by 16 times in Laos, by 5-9 times in Brunei and Thailand, by 1-3 times in Cambodia, China: Taiwan, Ceylon, India, Indonesia, Japan, North Borneo, Sarawak and Southern Viet-Nam. It increased by between 50 and 80 per cent in the Federation of Malaya, Hong Kong, southern Korea, Pakistan and the Philippines. Only in Burma has the number of registered commercial vehicles shown a decrease. However, despite this high rate of increase in automotive transport, Japan had only one commercial vehicle for 181 inhabitants in 1958 compared with one commercial vehicle for 15 inhabitants in the USA or 114 inhabitants in Italy. The corresponding figures for other Asian countries in 1957 are: the Federation of Malaya 246, Ceylon 362, Thailand 648, India 2,045 and Pakistan 4,060. In most countries of the region, the road transport industry is usually organized on a small scale. The services provided are in need of major improvement. Efforts have been made in some countries to create conditions more conducive to rapid development of road transport. However, owing to a shortage of foreign exchange, an insufficient supply of new vehicles has hampered the rapid expansion of the industry.

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[114] Reproduced from E/CN.11/L. 86 the full text of the report which may be obtained from the ECAFE Secretariat. The text given here is complete except the following portions of the original, not directly concerned with the problems of transport development: paras I-II (introduction) and annexes A to C (The list of participants, list of documents and agenda and annotated agenda).

Air transport is also growing in importance in most countries of the region, particularly in land-locked countries (Afghanistan, Laos and Nepal) and in the archipelago states of Indonesia and the Philippines as well as in Pakistan, where it presents an important link between the two parts of the country.

In many countries, a strong need was felt to expand coastal and sea-going shipping.

The Working Party felt that because of the limited availability of resources, especially foreign exchange, the promotional role of transport has not received adequate attention. New transport facilities of a promotional character, by opening up new areas, may broaden markets, expand the monetised sector of the economy and provide a location for some new industries closer to the natural resources, which otherwise may have to remain untapped. This aspect of transport development is related to the problem of balancing the improvement of existing facilities and operating efficiency on the one hand and the construction of new transport facilities on the other. However, as the main task up to the present has been transport rehabilitation, it is quite understandable that the development of new transport facilities should not have received adequate attention.

It was also felt that more attention should be paid to the fuller utilization of existing capacities which can often be achieved by small additional investment, particularly in railroad equipment and port installations. Because of the inadequacy of over-all transport capacity in most countries of the region, it is necessary to co-ordinate the development of the various modes of transport, so that the available capacity of each mode is utilized to the maximum advantage.

The Working Party considered that in planning for the development of transport, international and intra-regional links should be given greater emphasis. Means should be found for co-ordinating the transport development plans of the countries to facilitate and promote the flow of goods and passengers among the region. For instance, the possibilities of connecting national roads and railways could be studied, shipping services could be linked, harbour facilities for handling international traffic developed and frontier formalities simplified. In this connexion, mention was made that the Asian Highway project sponsored by ECAFE is a very desirable line of development.

Estimate of future transport needs in the process of economic development

In planning for transport development the basic problems are how to estimate total transport requirements in the process of economic development, and how to make more detailed estimates of the specific nature and location of traffic needs. For actual planning purposes, these requirements must be considered in relation to the capacity and quality of the existing transport facilities and services. An adequate projection of the future demand for transport services is a necessary first step in rational transport planning.

The Working Party considered what may be called the "dynamic" or promotional role of transport. In addition to meeting existing demands and new demands which will arise from expected developments in other sectors, transport also helps to open up new resources and markets. In certain regions with unexploited potential resources, transport may even play the role of the "leading sector" which carries other productive activities forward with it. Where past development has resulted in an imbalance of growth between different areas, appropriate emphasis may need to be given to this promotional function of transport to solve the problems of the so-called "depressed areas". In these areas, the development of transport may have to precede progress in all other sectors and may be justified on the basis of potential rather than existing demand.

The creation of new transport facilities involves heavy capital expenditure, and most countries of the ECAFE region have not found it possible, within the resources available, to give adequate attention to the development of transport to open up new areas. Priority has been given, in the plan for economic development to programmes intended to provide additional transport capacity on existing railway and road networks. This has been done to meet the transport requirements envisaged in the plan. It was felt that more resources could be usefully spent in the comparatively less developed countries in opening up new roads or railway lines or in fostering other means of transport.

It was generally recognized that an evaluation of economic and social benefits from a given infrastructure is beset with a great deal of difficulty. Both the direct and indirect effects of new transport facilities have to be taken into account in assessing their economic justification. In developing new transport facilities, however, it is necessary to avoid duplication. Having regard to the limitation of resources and the other competing demands (including the demands for creation of additional capacity on the existing means of transport) it is necessary to ensure that the limited resources are used with the maximum efficiency, that is, in such a way that a shortage of transport capacity does not hamper the process of economic growth, and that there is no excess capacity. It was thus considered necessary to make a careful assessment in concrete terms of the prospective transport demand as well as of the economic and social effects of given transport projects. The

Working Party felt, however, that because of limited resources, the countries which had undertaken development programmes on an extensive scale could not provide for even the minimum transport demands, either for augmenting the capacity of the existing transportation system or for opening up of new areas.

It was recognized that an estimate of future transport requirements will depend on projected developments in the various sectors of the economy. The Working Party in the first place considered the question of whether it was possible to establish any broad regularity of relationships between aggregate transport requirements on the one hand and over-all economic growth measured in terms of gross national product on the other. The answer to this question could perhaps be sought by examining available data of past developments in the countries concerned and also the data relating to advanced countries. When past relationships between the gross national product and transport requirements measured in terms of aggregate freight traffic are fairly stable, this information can be applied to projections of national income in order to arrive at a broad view of total transport requirements in the future. The relationships statistically observed may be linear or non-linear, and the projection models to be applied in practice will vary from case to case. The Working Party noted with interest the fact that, even within the ECAFE region, the development of transport demand is related in quite different ways to the rate of economic growth depending upon the stage of economic development and peculiar characteristics of each economy. As national income grows, the volume of transport increases. But, in the earlier stages of development, the increase in freight traffic tends to be much greater than the rise in national income. In countries like India and Pakistan, for instance, the volume of freight traffic over the last few years had tended to grow at a much faster rate than the growth of national income. The possible factors which affect the relationship between transport and over-all economic activity are geographical conditions, economic structure as reflected in the relative share of various sectors in the gross domestic product commodity composition of the national product, sources of energy supply, the process of urbanization, etc. It was suggested that further research should be undertaken to measure these relationships and to improve projection techniques.

Where it is possible to make the kind of demand projection referred to above, it will indicate the general magnitude of the problem and provide a check on more detailed estimates. However, it is only a first approximation. The real work of transport estimation must start with a detailed appraisal of production and traffic prospects. Moreover, since economic development means in most cases a break from the past, the usefulness of projection models based on past time series or cross section data may be limited. The past relationships may not be stable enough to warrant a direct projection into the future, and the time series of statistical information available may not be long enough, as is the case in most countries of the region, to be of value. The estimates of future transport requirements will in any case have to be based primarily on a detailed study of future development potentials, the location of expected economic activities, probable sources of raw materials, and anticipated destinations of final products. This approach inevitably involves a careful stock-taking of present transport facilities and the actual traffic.

The method of making detailed estimates, from which a traffic flow plan is constructed to provide a basis for comprehensive planning, seems to have achieved good results in some countries. In most developing countries, however, a reliable statistical basis to provide such estimates in even aggregate terms is often lacking; detailed transport estimates will be beyond the reach of these countries for some time to come. A short-cut device is to estimate transport requirements from forecasts of production and traffic trends for a few categories of important commodities which represent the bulk of the traffic in a given country. Where this method is used for the projection of total transport demand, however, the questions of changes in the structure of transport demand and of changing relationships between production and movement of goods will again have to be considered. This method was stated to have been applied in the case of India and Pakistan for working out the transport requirements under their Five-Year Plans. The commodities for which detailed projections were possible accounted for the bulk of the additional traffic generated by these Plans. It was likely that in some other under-developed countries, also in their early stages of development, the bulk of additional traffic might arise from a few industries of basic importance. It should be possible in such cases to estimate the aggregate transport needs on the basis of the projected requirements of these commodities. For operational purposes, further steps need to be taken to bring transport projections into closer relationship with specific projects. It will be necessary to work out estimates for specific regions or routes in connexion with given transport projects.

To assess more closely the economic effects of a given scheme of transport development, it was suggested that an analysis might be made of the effects on traffic, further identified as (*a*) the traffic diverted from old routes, (*b*) the traffic induced on the basis of the unchanged factor supply, and (*c*) the traffic newly generated by the increased supply of the factors of production.

There are several ways in which tools of economic analysis can be applied to provide as meaningful a picture as possible of future transport requirements. However wide the margin of error may be, an attempt at some kind of demand projection remains one of the preconditions of rational decisions in transport planning. Another of the preconditions is organized knowledge of the conditions and quality of the existing transport facilities and services. It was, therefore, suggested that an inventory of the existing transport facilities and a survey of actual traffic may merit a high priority in the action programme of the governments embarking upon planning for transport development. It was observed that, among statistics relating to transport, information on motor and water transport as well as on non-mechanized transport is especially scanty in most countries of the region. Within certain limits, the techniques of the sampling survey may be applied with great benefit for the collection of some of the essential statistics on available transport capacity and services. At the same time, there is great scope for improving transport statistics through a better use of existing machinery, because a variety of information must be at the disposal of transport authorities as by-products of their daily operations. The Working Party noted with interest the comprehensive transport survey which is currently under preparation in Pakistan. It was also suggested that the ECAFE secretariat may usefully study the results of this survey and might, if possible, apprise other countries of the details of the survey. Where necessary the ECAFE secretariat could be associated with this kind of survey work if staff resources permit.

The Working Party emphasized the importance of comprehensive and accurate statistical data in formulating plans for transport development and assessing progress in their execution. The data required for effective transport planning are not confined to the narrow field of transport statistics. It would be necessary to strengthen statistics generally including those for agricultural production, industrial production, etc. which bear on the growth of the economy as a whole. It was proposed that in consultation with the Conference of Asian Statisticians and its subsidiary bodies, the Inland Transport and Communications Committee may consider the question of collecting the statistical data required for planning transport development.

It was the consensus of opinion of the Working Party that there is a predominant need for an integrated approach to transport planning. Questions relating to the development of individual means of transport should not be considered in isolation, but should be viewed as part of an integrated transport system. Transport planning itself should also be co-ordinated with the planning process of general economic development. It will be useful to consider suitable administrative arrangements to ensure that the transport implications of individual development projects are fully examined at their early stage of formulation. In planning the development and integration of transport programmes in countries where private enterprise plays an important role, suitable arrangements should be made for drawing up the programmes in consultation with the private sector. Some such arrangements are understood to have been made in countries like India and Pakistan. Because of the prevailing shortage of technically competent personnel in the region, greater importance should be attached to the training of experts in transport economics and planning. The Working Party also felt that wherever possible it may be advantageous to associate the representatives of workers in formulating policies and planning for transport development.

Since heavy capital investment is required for transport development in under-developed countries, every effort should be made to minimize requirements for transport services. The size and direction of commodity flow may be influenced by public policy relating to the location of particular industries by the prices of essential raw materials and products, and by processing and storage facilities. It was emphasized that some waste of resources cannot be avoided without government regulation and control. The extent of the control and regulation required to ensure the most efficient use of the limited transport resources needs to be examined.

Choice of means of transport and investment criteria

The Working Party endorsed the view that for freight haulage railway transport offers special advantages when traffic is consigned in bulk, and hauled over long distances, and when the traffic flow is regular without intermediate handling. On the contrary, highway transport offers special advantages for small short-haul consignments, with poor loadability and requiring urgent delivery. Waterway transport has special advantages in the case of heavy consignments particularly of low-rate bulk cargo, and is specially suitable when the entire transport process can be by water.

The Working Party felt that in practice the choice between the various means of transport would depend upon numerous considerations such as the geographical features and the factor endowments in the country, the nature of the traffic to be moved, and the comparative costs of development of the various modes of transport. One important consideration to be kept in view while comparing the costs of providing different means of transport is the amount of foreign exchange required and the likely effect on the balance of payments position of the country.

The Working Party noted that in comparing the costs of development of the various modes of transport, it was important to keep in view the potential capacities available on the existing modes which could be used with little or no additional investment. It was also important to consider what additional capacity will be created by a given investment which, though not immediately utilized, may be available in future. The Working Party felt that the economic cost calculations could only yield very broad conclusions and could not by themselves be relied upon to determine the field of each mode of transport. According to the implications considered, the parameters involved were far too numerous and too variable to enable precise decisions to be made. It was felt, however, that the cost calculations were, nevertheless, useful insofar as they could generally guide the choice in specific cases.

The Working Party recognized the role of the railways in developing some of the major cities of the world such as New York and Tokyo, because of their ability to provide mass transportation for passengers. However, in other than urban areas, the role of railways was gradually changing with the advent and rapid development of automotive transport. The railways in industrialized countries of the world were tending to concentrate on goods traffic—and more particularly on the cartage of heavy commodities like coal and mineral ores, and passenger traffic was being increasingly diverted to other means of transport. The Working Party noted that some of the advanced countries were planning heavy investments to improve and modernize the services provided by the railways with a view, over the long run, to reducing operating costs. The Working Party felt that it was desirable to examine the marginal costs of providing and improving railway facilities, as compared with similar costs for other services. The decisions to invest should be guided by such cost calculations along with the other economic and social considerations having a bearing on the future role of railways in these countries.

Nevertheless, the Working Party noted that, in many countries of the region, railways had a very important part to play and would continue to do so for a long time to come. The railways were not only best suited to the type of traffic which was generated in the early stages of development, such as traffic in primary mineral products, but also had marked over-all developmental effects on the economy. It was desirable, however, for these countries to bear in mind recent developments in the transportation systems of the advanced countries. In connexion with the development of highway transport, it may be useful particularly to bear in mind the problems of congestion being faced in some advanced countries.

It was pointed out by some representatives that although for short distance traffic, highway transport was more economical than rail transport, it was not always easy to determine the exact sphere of the different forms of transport, particularly road and rail, in the case of some countries. Reference was made to an analysis which had been carried out in the United Kingdom to determine the major factors which influence the cost structure of various forms of transport with a view to deciding the limits for the activities of different modes of transport. The cost component of transport falls roughly under four main headings, namely, vehicle cost, terminal and port costs, track and navigation costs and overheads. Each of these is influenced by different factors and hence a different weight would have to be given in the total assessment according to the form of transport under consideration. By careful statistical analysis, it would be possible to assess fairly accurately the cost of each form of transport.

The Working Party stressed the need for proper organization, regulation and control of highway transport in the countries of the region. For the most part, in the countries of the region, road transport operations involved small fleets which were poorly organized and regulated. In the case of smaller countries of the region where average hauls were short, highway transport offered special advantages. In this connexion, the Working Party noted that in New Zealand sizable savings, such as reduced empty running and better loading, had been achieved through one-vehicle owners forming co-operative and other organizations, which provide common facilities such as depots, bulk purchase of petrol etc. The Working Party noted that in some countries of the region railways were controlled and regulated by the Federal Government while highway transport was largely a matter of individual state responsibility. This rendered difficult such organization and control of highway transport as might be thought desirable.

In some of the underdeveloped countries, although there was an over-all shortage of transport capacity, and the facilities available on certain routes were inadequate, there was avoidable duplication of transport facilities on certain other routes or areas. It was, therefore, felt necessary in these countries to consider suitable measures for the co-ordination and integration of the services provided by railways, road transport and the other modes. One of the approaches to the problem of rail-highway co-ordination under consideration in some advanced countries was that the two means of transport should be placed on an equal footing and should be regulated by fair competition in price and service to the users. With this end in view, thought is being given to a suitable adjustment in the railway freight structure to make railway rates correspond to the costs of haulage and to free the railways of their social obligations including obligations with regard to personal preferences or publication of rates, etc. In this connexion, the Working Party noted with interest the action taken in the United Kingdom where the railways had been largely freed from their previous obligations as common carriers and the obligation not to discriminate between shippers. This was expected to enable the British Railways to compete more successfully with the road hauliers and the long range effects of this measure would be of interest to countries of the region. The Working Party felt that in the conditions obtaining in the countries of the ECAFE region, it would not be possible to introduce such reforms in the railway rate structure in the near future, without seriously dislocating the general cost and price structure in these countries.

The Working Party felt that the problem of the choice of labour-intensive and capital-intensive techniques assumed special importance in the ECAFE region because of the availability of cheap manual labour. Governments were faced with difficulties because the desirable level of efficiency might come into conflict with the goal of labour absorption. It was therefore necessary to carefully study each project in all its aspects particularly with special reference to labour productivity and local conditions. In this connexion the Working Party stressed the need for the suitable adaptation of capital-intensive techniques and the development of labour intensive techniques to make fuller use of the abundant manpower available in the region. The Working Party noted with interest that the ECAFE secretariat had organized a working party to study labour and capital-intensive techniques in earthmoving operations. The conclusions of this Working Party would also be of interest for highway construction and railway embankments.

Although technical improvements in railway, highway and inland waterway operations were taking place rapidly, so far as the countries of the ECAFE region were concerned, it was necessary to exercise caution when proposals were made for introducing the latest types of equipment. The scarcity of foreign exchange imposed severe limitations, making it difficult for many countries of the region to take advantage of the latest developments in technology. However, it would be highly desirable that techniques currently used are constantly reviewed with a view to adapting them to produce the optimum results, taking account of obsolescent equipment. In a number of cases, simple and inexpensive improvements had tended to yield useful results and notable economies had been achieved. It was further considered necessary to examine the availability of local maintenance facilities before importing modern equipment to ensure its economic utilization.

The Working Party recommended that, before considering the question of providing additional track for a section of the railway, the introduction of improved methods of operations, signalling and other modernized techniques which would greatly increase the operational capacity of a single line should be examined.

In view of the difficulties experienced by most countries of the region, owing to a shortage of foreign exchange to procure adequate quantities of automotive equipment to meet their growing demand for transportation and to reduce the burden on rail transport, the Working Party felt that it might be useful if the secretariat can explore the possibilities of stimulating intra-regional co-operation between the countries which produce such equipment and others wishing to import it. Countries may also consider the desirability of establishing up-to-date and adequate facilities for repairs, maintenance, and reclamation of automotive parts where they do not exist.

The Working Party therefore emphasized the useful role training plays in providing the skilled personnel required to man key positions for the operation and maintenance of equipment as well as for the introduction of modern techniques. The Working Party noted the efforts made by the ECAFE secretariat to improve and augment the training facilities available within the region for transport officials, and also the efforts the secretariat had been making to bring to the attention of the governments of the region the availability of training facilities abroad. In this connexion, it was noted with special interest that, through the efforts of the ECAFE secretariat, it has been possible to arrange for groups of experts to visit, upon request, the countries of the region to study on-the-spot special technical problems and to advise on the best methods of solving them.

The Working Party also noted the important role telecommunications played in the efficient operation of transport services. It therefore felt that countries should take adequate account of this factor in planning transport development projects.

Financing of transport development

The Working Party recognized that governments should assume responsibility for providing finance for the development of transport, whether nationalized or not, primarily because transport constitutes an important infrastructure of the economy, and investment in transport is often large, slow-yielding and risky. The private sector may not be able to provide adequate and ready capital to the extent desired.

The benefits of transport are not confined only to the users of the services, but are shared by all members of the community. The expenses of providing transport facilities should therefore be borne partly by the national exchequer.

There are two problems of financing transport development. The first relates to devising measures which will result in the maximum utilization of the available resources, and the second to devising principles and methods of dividing the total expenses incurred so that the best interests of a developing economy are served without throwing undue burden on any sector of the economy. The Working Party dealt with these problems in a general way but with special reference to rail and road finance.

The Working Party agreed that generally each form of transport must pay its way. It was, however, recognized that it may not always be possible to do so, particularly in the initial stages. In order to encourage development of certain areas or sectors of the economy it may be desirable to charge low rates, although this may result in losses which may have to be borne by the national exchequer. In the circumstances prevailing in the countries of the region, it is not always possible to adopt a rate policy aimed at equating costs with rates, and the needs of the over-all economic development have to be borne in mind in deciding upon a suitable rates policy. For example, there are some commodities such as coal whose movement has an important bearing on the development of other sectors, and the tariffs charged for them have to be determined independently of cost considerations.

In considering rate policies, it was felt that the nationalized undertakings like railways should make every attempt to evolve a rates structure which would enable them to cover at least operating costs. In this connexion particular care should be exercised in providing for costs of depreciation not at the book value but on the basis of replacement costs. It was pointed out that a policy of charging rates below prime cost should be adopted in special circumstances and for specific purposes only, as such rates might stimulate artificial demand and result in over-crowding and traffic congestion, and might also affect the competitive position of industries or their location. The Working Party noted that the rates of nationalized undertakings tend to be sticky and usually lag behind the general price level in inflationary conditions, thus increasing the real advantages sought to be given and aggravating the burdens assumed by the undertaking. Caution should therefore be exercised in adopting such a policy.

The Working Party agreed that the governments in the countries concerned could best decide what should be the appropriate rates policies for transport undertakings after taking into consideration the special circumstances obtaining in their respective countries. Sometimes nationalized undertakings are required to earn sizable surpluses, care being taken, however, that undue hardship is not caused.

Governments have to find the finance required for the construction and maintenance of roads. Taxes are levied on the users of roads. In some countries, part of motor taxation is paid into a fund earmarked for road development. It was, however, considered that where economic development was taking place in accordance with an approved national development plan there was hardly a case for establishing special road funds. In the context of planning, the best procedure would be to determine road expenditures in the light of over-all economic considerations and to allocate funds accordingly. In regard to nationalized transport undertakings, it was mentioned that the establishment of special funds by these undertakings might provide incentives to them to economize and augment their resources thus reducing the pressure on the national exchequer to find funds for development. Where no such plans existed or where their implementation was not effective, the establishment of such funds may have some practical advantages.

The attention of the Working Party was drawn to the development of a theory in road finance. According to this theory, in order to make the best use of the existing road network, road users should be taxed in accordance with the difference between private and social costs. Recent research in a developed country suggested that taxes should be high in cities, especially where traffic was most congested. On the other hand, they should be low on rural highways. Existing user taxes were not distributed in this way. However, there would be many administrative difficulties in putting such a theory into practice, especially in the under-developed countries of this region and its implications were not considered in detail.

The Working Party thought that while it was logical and desirable to divide expenses incurred in transport development between the users and the national exchequer, it was not possible to give a formula or to suggest guiding principles to arrive at such a division. Each country has to take the decision in the light of its special circumstance.

The Working Party was gratified to note the substantial foreign assistance received by many countries of the region. It felt, however, that in the utilization of aid, it would be appropriate if the needs of the transport sector as a whole, within the framework of over-all economic development, were kept in view.

Future work

The Working Party recommended that in consultation with the Conference of Asian Statisticians and its subsidiary bodies, the Inland Transport and Communications Committee may consider the question of collecting statistical data required for planning transport development.

The Working Party noted the deficiencies in transport statistics in fields other than rail and air transport, and recommended that governments increase their efforts in helping to fill these gaps, particularly the non-mechanized means of transport, by means of sampling methods when appropriate.

Because even within the ECAFE region, the development of transport demand is related in quite different ways to the rate of economic growth depending upon the stage of economic development and peculiar characteristics of the economy, the Working Party suggested that further research, particularly on the possible factors affecting these relationships, to measure these relationships and to improve projection techniques be undertaken.

In order to assess more closely the economic effects of a given scheme of transport development, the Working Party recommended that an analysis be made of the effects of a given scheme of transport development on traffic, further identified as (*a*) traffic diverted from old routes, (*b*) traffic induced on the basis of the unchanged factor supply, and (*c*) traffic newly generated by the increased supply of factors of production.

The Working Party recommended that in view of the paucity of capital and the abundance of labour in the region the adaptation of capital intensive techniques and the question of evolving labour intensive techniques be studied in detail.

The Working Party felt that because of the prevailing shortage of technically competent personnel in the region, governments should give high priority to the training of experts in transport economics and planning.

Since organized knowledge of the conditions and quality of existing transport facilities and services is a precondition to decisions in transport planning, the Working Party suggested that an inventory of the existing transport facilities and a survey of the actual traffic may merit a high priority in the action programme of the governments embarking upon transport development. The ECAFE secretariat may usefully study the results of this survey and apprise other countries of the details of the survey; where necessary it could also be associated, if staff resources permit, with this kind of survey work. The Working Party also felt that there is great scope for improving transport statistics through better use of existing governmental machinery, which has at its disposal a variety of information on transport as by-products of daily operations.

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UNITS AND SYMBOLS EMPLOYED

Unless otherwise stated "tons" relate to metric tons, and "dollars" relate to United States dollars.

The following symbols have been used throughout:

* = 12 months beginning 20-23 March of the year stated.
‡ = 12 months beginning April of the year stated.
† = 12 months ending September of the year stated.
ø = 12 months ending June of the year stated.
Mn = million.
I, II, III, and IV for quarters of years.

. = not applicable.
... = not available.
— = nil or negligible.
r = revised figures from this issue.
Figures in italics are provisional or unofficial.
Figures in brackets are from national sources.

Substantial breaks in the homogeneity of a series are indicated either by a horizontal line across the column or by vertical double lines in a row of figures.

SOURCES

To ensure comparability, data compiled or published by the United Nations Statistical Office have been incorporated wherever feasible; material supplied by governments, publications of governments, of the United Nations specialized agencies and of international commodity study groups have been used as additional sources.

1. REGIONAL STATISTICAL SERIES

Annual and quarterly figures

	1952	1953	1954	1955	1956	1957	1958	1959	1959			1960	
									II	III	IV	I	II
POPULATION (*Mid-year, million*)													
Including mainland China	1,365	1,387	1,411	1,433	1,462	...	...	...	.	.	.	.	.
Excluding mainland China	796	804	816	825	841	854	865	*878*	.	.	.	.	.
AGRICULTURAL PRODUCTION[a]													
Index of agricultural production (*1952/53—1956/57=100*)													
All commodities	93	98	100	104	107	105	109	113	.	.	.	.	.
Food	92	99	100	103	107	105	109	113	.	.	.	.	.
Per capita food	95	100	100	102	104	100	103	105	.	.	.	.	.
Cereals (*million tons*)													
Rice (paddy)	99.0	111.0	104.3	113.3	119.1	110.1	124.2	127.6	.	.	.	.	.
Wheat	14.7	15.7	17.7	18.4	18.6	19.6	17.8	20.7	.	.	.	.	.
Maize	5.5	7.1	8.0	7.1	8.0	8.2	9.0	9.9	.	.	.	.	.
Millet and sorghums	15.1	18.5	18.2	15.5	15.5	16.6	18.0	16.8	.	.	.	.	.
Starchy root crops (*million tons*)													
Potatoes	5.6	5.8	5.8	5.9	5.8	6.8	7.2	6.7	.	.	.	.	.
Sweet potatoes and Yams	13.4	12.8	13.3	15.3	15.6	15.0	15.5	16.1	.	.	.	.	.
Cassava	9.7	11.8	12.8	12.4	12.3	13.1	14.2	15.3	.	.	.	.	.
Oilseeds (*million tons*)													
Groundnuts (in shell)	3.6	4.2	5.0	4.7	5.1	5.5	5.9	5.5	.	.	.	.	.
Copra	2.4	2.3	2.6	2.6	2.8	2.7	2.2	2.2	.	.	.	.	.
Tea (*thousand tons*)	552	553	615	634	634	651	660	*650*	*164*	*219*	*180*	*89*	*149*
Tobacco (*million tons*)	0.7	0.7	0.8	0.8	0.9	0.9	0.8	0.8	.	.	.	.	.
Fibres (*million tons*)													
Cotton (lint)	1.1	1.2	1.4	1.3	1.3	1.4	1.3	*1.1*	.	.	.	.	.
Jute	2.4	1.5	1.6	2.3	2.3	2.2	2.4	*2.1*	.	.	.	.	.
Natural rubber (*thousand tons*)	1,706	1,637	1,714	1,811	1,770	1,781	1,797	1,923	460	494	544	442	437
INDUSTRIAL PRODUCTION													
Index of industrial production[b] (*1953=100*)													
Mining and manufacturing	89	100	110	123	145	166	168	200	195	202	215	231	[illegible]
Mining	94	100	100	116	133	149	150	156	157	158	163	167	169
Manufacturing	89	100	111	124	147	168	171	206	200	208	222	240	239
Food beverages, tobacco	91	100	100	115	124	131	136	142	122	124	141	200	[illegible]
Textiles	88	100	111	122	137	144	138	152	148	156	160	158	162
Paper and paper products	80	100	114	131	151	168	169	209	201	216	226	231	239
Chemicals, petroleum and coal products	85	100	113	133	159	184	192	217	217	219	232	249	258
Non-metallic mineral products	90	100	115	120	141	165	170	192	192	192	209	213	[illegible]
Basic metals	90	100	110	119	140	155	149	196	193	204	220	230	245
Metal products	81	100	116	126	177	231	243	344	332	362	400	416	458
Coal (*million tons*)	85.3	88.5	85.3	86.9	92.8	103.1	103.2	104.4	[illegible]	[illegible]	[illegible]	[illegible]	28.04
Iron ore (*million tons*)	7.77	7.70	8.41	8.91	10.34	11.55	12.09	*15.73*	[illegible]	4.18	4.14	4.50	5.22
Tin in concentrates (*thousand tons*)	105.1	104.4	109.9	109.6	108.5	104.1	73.1	72.7	[illegible]	17.7	[illegible]	21.1	22.2
Petroleum, crude (*million tons*)	15.90	17.59	20.19	34.50	46.17	57.64	63.18	*69.54*	17.57	17.53	18.13	18.52	18.18
Salt (*thousand tons*)	5,043	5,246	4,692	5,023	5,553	6,810	7,604	6,490	...	...	...	...	...
Sugar (*thousand tons*)	3,806	4,192	3,979	4,800	4,931	5,131	5,292	5,963	916	622	1 382	2,774	1,114
Cotton yarn (*thousand tons*)	1,070	1,225	1,351	1,386	1,497	1,597	1,487	*1,596*	[illegible]	[illegible]	[illegible]	407	417
Cotton fabrics (*million metres*)	6,606	7,545	8,153	8,188	8,889	9,268	8,259	8,441	[illegible]	2,119	2,154	2,126	2,175
Jute manufactures (*thousand tons*)	992	942	1,013	1,145	1,268	1,209	1,255	1,321	316	337	345	[illegible]	349
Paper excluding paper board (*thousand tons*)	962	1,231	1,367	1,575	1,759	1,967	2,029	2,489	606	638	665	667	667
Vegetable oils (*thousand tons*)	839	879	969	1,084	1,150	1,317	1,198	*1,200*	[illegible]	[illegible]	[illegible]	274	274
Cement (*million tons*)	12.7	14.8	17.7	17.9	21.0	24.5	25.6	29.2	7.4	7.2	8.1	8.0	8.9
Steel (ingots & metal for castings) (*thousand tons*)	8,616	9,234	9,520	11,209	12,957	14,408	14,063	*19,249*	[illegible]	5,019	5,515	5,983	6,160
Tin metal (*thousand tons*)	64.7	64.9	74.5	74.5	78.9	74.3	48.2	*48.4*	10.4	13.1	13.6	16.5	18.6
Electricity (*thousand million kWh*)	63.5	69.0	74.9	82.5	93.0	104.0	*109.1*	*119.6*	29.7	30.5	31.9	32.3	34.4
TRANSPORT[c]													
Railway traffic (*thousand million*)													
Passenger kilometres	152.8	158.0	164.0	171.5	182.6	190.2	195.9	*205.3*	52.5	53.9	51.5	55.0	57.0
Freight ton-kilometres	96.5	100.0	98.3	107.5	117.5	130.2	131.2	139.2	33.3	33.4	36.0	40.0	34.9
International sea-borne shipping (*million tons*)													
Freight loaded	31.6	37.1	38.9	42.6	45.0	47.2	46.7	*46.9*	*15.0*	*11.6*	*10.7*	*12.8*	*12.5*
Freight unloaded	52.8	64.2	66.8	72.9	85.8	102.5	88.4	*103.7*	[illegible]	*26.3*	*28.8*	*30.6*	*32.0*
EXTERNAL TRADE													
Total value (*million US dollars*)													
Exports	8,099	7,342	7,650	8,863	9,379	9,939	9,258	10,592	2,553	2,731	3,062	2,809	*2,913*
Imports	10,029	9,295	8,959	9,671	11,414	13,547	11,021	11,603	2,929	2,920	3,154	3,266	*3,451*
Quantum index[d] (*1953=100*)													
Exports	99	100	110	125	133	143	138	154	149	156	170	*150*	...
Imports	98	100	106	110	129	145	125	138	140	138	147	*149*	...
Unit value index[d] (*1953=100*)													
Exports	110	100	99	102	100	99	94	97	97	101	105	*109*	...
Imports	108	100	96	96	97	101	96	92	91	91	92	*96*	...
Terms of trade[d] (*1953=100*)	101	100	103	107	103	97	98	106	107	111	114	*114*	...

1. REGIONAL STATISTICAL SERIES *(Cont'd)*

Annual and quarterly figures

	1952	1953	1954	1955	1956	1957	1958	1959	1959			1960	
									II	III	IV	I	II
EXTERNAL TRADE *(Cont'd)*													
Direction of trade[e] *(million US dollars)*													
Exports to:—													
ECAFE countries	2,974	2,590	2,570	2,726	3,028	3,250	2,868	*3,074*	568	*776*	*870*	*852*	*861*
Western Europe (including U.K.)	1,863	1,759	1,789	2,135	2,198	1,120	1,993	*2,226*	498	*559*	*705*	*635*	*553*
U.K.	840	744	845	1,004	1,004	922	1,002	*1,104*	242	*279*	*348*	*297*	*247*
U.S.A.	1,390	1,238	1,172	1,530	1,532	1,652	1,630	*2,193*	548	*591*	*596*	*570*	*603*
Sterling area	2,851	2,339	2,691	2,964	2,990	3,191	2,998	*3,272*	753	*864*	*971*	*854*	*875*
Imports from:—													
ECAFE countries	3,121	2,835	2,726	3,097	3,491	3,842	3,443	*3,639*	888	*919*	*1,061*	*1,041*	*1,032*
Western Europe (including U.K.)	2,436	2,221	2,188	2,202	2,590	3,183	2,419	*2,614*	684	*652*	*706*	*714*	*796*
U.K.	1,073	930	902	955	1,133	1,323	1,033	*1,091*	286	*275*	*298*	*300*	*327*
U.S.A.	2,193	1,800	1,813	1,990	2,414	3,371	2,572	*2,459*	677	*644*	*584*	*710*	*803*
Sterling area	2,914	2,682	2,400	2,659	3,076	3,613	2,866	*3,194*	780	*831*	*900*	*858*	*914*
Export of primary products[f]													
Quantum index *(1953=100)*													
General	98	100	102	108	109	112	106	109	108	110	119	117	*113*
Food	96	100	107	108	115	120	114	118	114	119	132	131	*126*
Agricultural materials	101	100	99	109	105	101	99	103	95	105	115	101	*100*
Mineral products	95	100	95	100	111	133	112	106	150	99	93	143	*129*
Unit value index *(1953=100)*													
General	118	100	100	108	102	102	99	108	104	108	117	109	*109*
Food	100	100	105	95	91	93	92	88	84	89	91	81	*82*
Agricultural materials	131	100	97	119	111	110	102	125	121	125	140	138	*139*
Mineral products	109	100	93	95	101	102	108	104	105	100	111	94	*91*
Quantity of exports *(thousand tons)*													
Food													
Fish, fresh or simply preserved	145	153	164	180	173	172	279	232	53	58	57	69	55
Rice and rice products	2,945	2,654	2,987	3,294	3,244	3,988	3,064	3,442	887	949	892	1,102	1,152
Sugar	1,255	1,755	1,604	1,689	1,632	1,804	1,959	1,757	604	259	361	536	655
Tea	394	436	459	409	458	420	457	452	92	124	148	101	81
Spices	62	59	47	80	90	88	74	97	16	23	31	24	14
Agricultural materials													
Hides and skins, raw	22	24	24	22	20	20	18	22	8	5	8	6	7
Oilseeds, oil nuts & oil kernels	1,143	1,017	1,219	1,232	1,416	1,396	1,092	1,001	162	275	360	260	289
Rubber, natural	1,692	1,611	1,688	1,782	1,699	1,737	1,689	*1,930*	*449*	*495*	*513*	*440*	*414*
Wood and lumber	1,094	1,481	1,732	2,023	2,251	2,359	3,321	4,003	1,045	1,237	1,021	971	1,241
Cotton, raw	321	379	222	320	265	204	223	162	*43*	*38*	*25*	*52*	*58*
Jute, raw	841	982	892	981	958	785	906	809	156	162	290	239	182
Hemp, raw	127	132	122	135	143	141	109	113	30	25	28	36	25
Vegetable oils, not essential	495	404	499	602	515	450	417	392	94	93	119	75	74
Mineral products													
Iron ore	3,152	3,728	3,540	4,399	5,636	6,631	5,877	7,661	2,482	2,248	1,740	1,950	2,296
Tin ore and concentrates	46	45	45	44	45	42	27	30	7	9	9	10	9
Manganese ore	1,463	1,593	1,006	936	712	1,742	976	986	290	246	203	226	360
Coal	2,729	2,201	2,063	1,562	1,940	1,655	1,800	1,556	349	395	375	443	317
Crude petroleum	5,670	6,963	7,083	8,367	10,027	12,408	12,478	9,825	4,484	1,715	2,093	*3,888*	*2,964*
GOLD AND FOREIGN EXCHANGE ASSETS[gr] *(end of period, million US dollars)*	5,442	5,100	4,930	5,357	5,161	4,032	4,275	5,140	4,602	4,773	5,140	5,247	5,335

GENERAL NOTES: In general, the regional statistical series cover the countries of the ECAFE region except mainland China, Nepal and, in most cases, Afghanistan and Iran; in some cases, other countries have also been omitted because of lack of data. Except in the case of mainland China, countries omitted from the regional series are, from the point of view of the series, usually less important. To ensure comparability, the countries included in different periods for each series are the same.

a. Crop year except rubber and tea beginning from the year stated. FAO source except rubber and tea for which the International Rubber Study Group and the International Tea Committee figures are used respectively.

b. This index compiled by the United Nations Statistical Office, covers Afghanistan, Brunei, Burma, Ceylon, China: Taiwan, Federation of Malaya and Singapore, Hong Kong, India, Indonesia, Iran, Japan, Republic of Korea, Pakistan, Philippines, Sarawak, Thailand and Republic of Viet-Nam. For more detailed statistics and explanatory notes see United Nations *Monthly Bulletin of Statistics.*

c. For countries covered see table 5 below.

d. Based on quantum and unit value indexes of exports and imports, compiled by governments, for Burma, Ceylon, China: Taiwan, Federation of Malaya and Singapore, India, Indonesia, Japan, Republic of Korea (since 1957), Pakistan, Philippines, Thailand and Republic of Viet-Nam. (Quantum indexes for Indonesia, Korea and Pakistan are derived from unit value indexes.) These national indexes are combined to form the regional index with the dollar values of exports and imports in the base year 1953 as weights. Exports and imports of the countries included in the index account for 89 and 90 per cent of total exports and imports of the region respectively, excluding Afghanistan, mainland China, Iran and Nepal, in the base year. Intra-regional trade is not deducted.

e. For countries covered see table 7 below. Prior to 1955, including data on Customs Union of Cambodia—Laos—Viet-Nam.

f. Exports of 18 primary products and food from 20 countries and territories (excluding Afghanistan, mainland China and Nepal) are included in the index. To minimize the effect of transit trade, only export of domestic produce is included for Hong Kong and net export of rubber is used for the Federation of Malaya and Singapore. The quantity of exports of each item is totalled for 19 countries and territories and relatives have been then weighted by the total value of exports of each commodity in 19 countries and territories in terms of United States dollars in 1953 to form the quantum index. The unit value index is obtained by dividing the index of total value of exports in United States dollars by the quantum index. The commodities included in the index account for 44 per cent of the total value of exports from the 16 countries. (If Hong Kong and Japan are excluded, the percentage is increased to 57.)

g Includes Burma, Ceylon, China (Taiwan), Federation of Malaya and Singapore, India, Indonesia, Iran, Japan, Republic of Korea, Pakistan, Philippines, Thailand and Republic of Viet-Nam. Figures prior to 1955 exclude Viet-Nam.

2. INDEX NUMBERS OF INDUSTRIAL PRODUCTION

1953 = 100[a]

	Weight	1954	1955	1956	1957	1958	1959	1959			1960			
								II	III	IV	I	II	July	Aug
CHINA (Taiwan)														
Industrial production[b]	100.0	107	119	125	142	153	173	185	185	208	198	214	228	222
Mining and quarrying	10.5	100	114	120	134	144	155	171	133	171	168	174	173	152
Coal	7.4	88	99	106	122	133	149	162	137	164	153	170	162	162
Manufacturing[b]	76.6	107	120	125	143	153	175	190	196	219	208	224	243	239
Food[b]	19.0	85	101	104	126	121	121	108	180	192	185	169	254	286
Textiles	17.8	116	122	115	128	124	152	153	149	171	156	173	171	173
Chemicals	9.5	109	120	134	158	180	219	211	212	246	217	258	243	246
Construction of buildings	1.1	106	145	104	118	177	118	119	117	107	119	163	61	92
Public utilities	11.9	115	123	135	149	162	182	178	187	200	185	207	219	214
Electricity	7.6	115	126	144	163	184	205	201	211	225	204	235	248	240
INDIA[c]														
Industrial production	100.0	107	116	126	130	132	144	136	143	147	160	151	...	...
Mining	7.2	103	107	110	122	128	136	139	130	132	153	155	...	...
Manufacturing	90.7	107	116	126	130	131	143	134	142	146	159	149	...	...
Sugar	4.3	84	123	144	160	152	161	30	9	167	440	71	...	...
Tea	5.9	106	110	110	111	118	116	115	216	140	18	83	...	...
Textiles	48.0	103	106	112	109	105	107	105	107	104	107	110	...	...
Chemicals	4.2	108	122	132	140	159	175	167	178	176	185	185	...	...
Basic metal industries	8.0	121	119	124	126	128	169	164	184	181	197	198	...	...
Metal products[d]	4.6	140	168	200	222	233	264	219	239	262	246	261	...	...
Transport equipment	2.9	113	171	236	246	229	289	250	319	318	367	333	...	...
Electricity	2.1	112	128	145	163	185	220	225	225	224	227	251	...	...
Industrial production (seasonally adjusted)	.	.	.	.	.	.	.	136	145	152	158	152	...	...
JAPAN														
Industrial production	100	108	117	144	167	168	208	202	211	229	248	254	260	259
Manufacturing and mining	92.8	108	117	143	169	169	210	204	213	232	252	258	264	263
Mining	7.2	96	97	107	118	114	113	112	114	117	119	120	125	118
Manufacturing	85.6	110	119	147	174	175	220	213	224	244	265	272	279	278
Food	11.5	108	115	122	128	135	142	128	119	120	220	126	137	130
Textiles	15.0	109	121	144	159	143	167	162	173	184	186	197	199	196
Chemicals	10.7	114	132	159	187	194	222	227	223	237	246	258	250	257
Ferrous metals	9.0	105	117	143	162	153	201	198	210	230	233	258	261	257
Machinery	17.0	113	114	166	230	247	354	340	373	417	439	488	514	511
Public utilities	7.2	106	114	131	146	155	177	174	179	190	195	205	212	208
KOREA, Republic of (1954 = 100)														
Industrial production	100.0	100	120	146	169	186	213	216	219	230	219	230	233	240
Mining	12.9	100	125	162	218	229	318	297	321	385	411	407	402	427
Coal	9.4	100	147	204	275	300	465	423	475	589	601	587	578	595
Manufacturing	80.1	100	119	144	162	180	200	206	207	210	197	212	214	220
Food	8.1	100	128	183	197	233	215	227	208	226	184	216	285	257
Textiles	21.1	100	123	143	175	180	187	195	188	186	177	184	169	176
Electricity	7.1	100	98	124	147	168	187	184	180	203	192	184	195	192
PAKISTAN														
Industrial production	...	128	161	182	192	*215*	*241*	*227*	*244*	*254*	*260*	.	...	...
Mining	...	101	107	125	130	*145*	*145*	*123*	*150*	*162*	*160*	...	...	...
Manufacturing	...	131	167	189	200	*222*	*250*	*236*	*251*	*263*	*270*	...	...	...
PHILIPPINES														
Mining	.	94	102	113	126	125	135	142	134	125	*123*	*130*	...	...
Manufacturing	.	113	127	147	158	170	185	198	184	183	*194*	...	...	...

a. Original base: *China (Taiwan)*, 1954; *India*, 1951; *Japan*, 1955; *Republic of Korea*, 1958; *Pakistan*, 1950; *Philippines*, 1955.

b. Sugar production is excluded from the monthly and quarterly index but included in the annual index. Weights relate to annual index.

c. Quarterly figures relate to the mid-month of each quarter.

d. General engineering and electrical engineering including general machinery and electrical machines, apparatus, appliances and supplies.

3. PRODUCTION OF SELECTED COMMODITIES

Monthly averages or calendar months

Thousand tons

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
TEA													
Ceylon	13.9	14.4	14.2	15.0	15.6	15.6	19.3	12.1	15.9	16.9	19.1	14.3	14.9
China (Taiwan)	1.6	1.1	1.1	1.3	1.1	1.7	1.9	1.0	2.7	1.1	1.3	1.4	1.1
India	24.4	25.3	25.2	25.4	27.0	26.7	24.1	47.9	30.5	4.6	24.4	37.3	48.0
Indonesia	3.9	3.6	3.5	3.9	3.9	3.7	3.4	3.2	4.1	3.5	4.0	3.4	3.3
Pakistan	2.1	2.0	2.1	1.8	2.2	2.3	2.3	3.9	2.7	0.2	0.9	1.9	3.1
NATURAL RUBBER[a]													
Cambodia	2.0	2.3	2.7	2.6	2.8	2.9	2.5	3.2	4.1	1.9	2.9	3.4	3.4
Ceylon	8.0	7.9	8.1	8.3	8.5	7.8	6.0	8.2	10.7	8.4	7.2	6.8	8.5
Fed. of Malaya & Singapore	49.5	54.1	53.1	54.1	56.2	59.1	55.0	62.9	63.2	59.1	54.9	64.2	63.2
India	1.8	1.9	2.0	2.0	2.1	2.0	1.5	2.1	2.8	1.6	1.7	2.1	2.2
Indonesia	62.5	62.1	58.1	58.0	52.0	61.1	66.0	58.1	70.3	49.8	51.6	45.3	34.7
Sarawak	2.0	3.3	3.4	3.5	3.3	3.7	3.4	4.6	4.1	4.1	5.3	3.5	4.4
Thailand	9.9	11.0	11.3	11.3	11.6	14.4	10.2	15.7	13.9	16.1	12.4	7.6	14.8
Viet-Nam, Republic of	4.6	5.5	5.9	5.8	6.0	6.3	5.9	6.8	9.0	2.9	6.9	7.6	7.0

3. PRODUCTION OF SELECTED COMMODITIES *(Cont'd)*

Monthly averages or calendar months

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
COAL													
China (Taiwan)	177	197	211	243	265	297	323	274	325	304	339	323	...
Federation of Malaya[b]	19	17	15	13	6	6	5	6	8	2		–	—
India	3,123	3,237	3,339	3,683	3,839	3,982	4,001	3,910	3,959	4,327	4,361	4,058	...
Indonesia	75	68	69	60	51	53	44	56	60	19	19	...	...
Iran	21	20	16	15	14	...	...	...	...	...	...	...	...
Japan	3,560	3,535	3,880	4,311	4,139	3,938	3,904	3,920	4,040	4,098	4,138	4,257	3,951
Korea, Republic of	74	109	151	203	223	345	313	352	436	446	435	428	441
Pakistan[c]	47	45	55	44	51	61	61	55	59	64	68	...	...
Philippines	10	11	13	16	9	12	14	12	13	14	11	...	...
Viet-Nam, Republic of	—	—	—	1.0	1.7	1.7	1.8	1.6	1.8	1.3	2.1	2.9	...
PETROLEUM, CRUDE[d]													
Brunei	399	438	470	450	434	450	454	458	437	403	331	...	...
Burma	15	18	19	33	39	44	45	46	46	45	42	...	...
Indonesia	898	982	1,061	1,289	1,342	1,518	1,537	1,585	1,600	1,632	1,745	...	...
Iran	292	1,422	2,207	2,927	3,333	3,731	3,767	3,735	3,908	4,134	3,903	3,908	4,314
Japan	25	29	29	27	31	34	32	34	38	39	44	50	51
Pakistan	22	23	24	25	25	26	25	26	28	...	...	...	...
Sarawak	6	6	6	6	5	5	5	5	5	5	...	...	...
IRON ORE[e]													
Federation of Malaya	103	124	207	252	237	318	350	395	316	375	489	613	561
Hong Kong	8	10	10	8	9	10	10	10	11	10	9	11	9
India	333	361	359	391	483	656	616	624	746	888	900	887	826
Japan[f]	136	126	159	187	167	207	203	231	233	211	238	278	246
Korea, Republic of	3	2	5	15	22	23	24	25	19	26	26	28	39
Pakistan	0.1	-	0.6	2.0	0.7	0.2	0.2	0.1	—	...	...	...	...
Philippines	119	119	120	112	92	103	103	111	81	89	96	...	...
TIN CONCENTRATES *(tons)*													
Burma	63	94	67	59	*102*	*102*	*102*	*102*	*102*	*102*	*102*	*102*	*102*
China (mainland)	*641*	*1,016*	*1,186*	*1,354*	*1,524*	*1,778*	*1,778*	*1,778*	*1,778*	*2,030*	*2,030*	*2,032*	*2,032*
Federation of Malaya	5,139	5,186	5,274	5,020	3,256	3,177	2,964	3,149	3,740	4,150	4,322	4,469	4,460
Indonesia	3,036	2,825	2,545	2,347	1,968	1,830	1,920	1,727	2,119	1,626	1,910	2,003	2,100
Japan	61	76	79	80	94	83	88	74	91	75	81	83	73
Laos	9	21	20	23	26	*25*	25	25	25	31	31	*31*	*31*
Thailand	828	933	1,057	1,145	654	820	849	815	976	1,064	1,000	1,089	1,118
SALT													
Burma	7.7	8.4	7.2	9.7	9.2	...	...	...	...	...	...	...	...
China (Taiwan)	30.7	35.1	25.4	32.3	36.6	35.8	52.7	3.4	40.8	55.2	31.8	43.8	...
India	229.9	252.2	276.5	307.0	350.1	264.9	582.5	244.4	58.8	162.1	594.3	...	...
Indonesia	10.9	3.8	9.1	28.9	19.6	26.2	—	17.8	87.1	...	...	...	...
Japan[g]	35.4	46.1	52.3	69.3	88.2	97.1	100.1	118.4	94.1	77.3	74.9	73.3	83.4
Korea, Republic of	15.0	29.5	16.4	30.8	36.4	32.5	27.0	68.1	34.7	0.3	47.1	55.4	84.9
Pakistan	33.6	33.8	32.8	38.3	29.9	24.0	20.8	25.7	28.6	34.2	...	...	...
Philippines	4.0	6.7	5.3	8.6	11.6	14.5	...	...	...	...	...	...	...
Thailand	18.5	19.7	20.6	21.9	35.6	38.3	...	...	...	...	...	...	...
Viet-Nam, Republic of	...	6.4	5.0	6.6	5.1	5.1	10.9	1.3	1.8	...	...	...	...
SUGAR[h]													
Afghanistan	0.42	0.50	0.40	0.40	0.39	0.38	...	...	...	...	...	...	...
Burma	2.00	1.50	1.58	2.68	3.40	3.31	...	...	...	...	...	...	...
China (Taiwan)	53.5	66.9	64.6	76.5	72.2	74.0	32.2	—	67.4	182.9	7.2	—	...
India	91.9	136.8	165.1	170.0	165.7	176.3	70.0	8.1	213.4	479.4	116.7	...	...
Indonesia	59.8	71.4	65.5	69.0	64.5	71.3	91.3	171.2	21.1	—	71.6	229.9	153.0
Iran	7.0	6.9	6.9	6.8	9.2	...	...	...	...	...	...	...	...
Korea, Republic of	1.6	3.2	5.2	2.6	4.3	5.0	5.8	4.4	5.7	4.7	4.4	6.0	4.7
Pakistan	6.4	8.0	7.4	9.4	13.8	14.2	12.1	0.6	12.1	28.0	...	...	...
Philippines	108.4	103.7	97.0	85.8	100.6	122.6	95.2	22.9	141.2	225.1	...	...	...
Thailand	3.6	3.1	3.3	4.2	6.1	*6.7*	...	...	...	...	...	...	...
Viet-Nam, Republic of	0.05	0.13	0.17	0.09	0.41	2.74	2.64	2.97	2.93	4.43	5.73	3.79	7.41
COTTON YARN													
Burma	0.15	0.12	0.12	0.14	0.20	0.30	0.24	0.32	0.38	0.30	0.29	0.33	0.29
China (Taiwan)	1.9	2.1	2.0	2.3	2.3	2.6	2.5	2.7	2.8	2.8	3.4	3.5	3.7
Hong Kong	3.3	3.5	3.8	4.0	4.4	5.2	5.2	5.3	5.7	5.6	6.2	...	...
India	59.0	61.6	63.2	67.3	63.7	65.0	62.8	65.1	67.1	63.9	63.2	67.1	68.0
Japan	38.7	34.9	41.1	43.1	36.6	39.7	39.1	39.6	43.6	44.1	46.7	45.6	45.7
Korea, Republic of	1.7	2.2	2.6	3.4	3.7	4.0	4.1	4.0	4.0	3.9	4.3	3.7	3.9
Pakistan	7.3	10.4	11.4	12.0	13.0	14.6	13.8	15.2	15.3	15.4	...	...	...
Philippines	0.06	0.05	0.07	0.07	0.06	*0.09*	0.08	*0.09*	0.11	0.07	0.06	0.07	0.07
COTTON FABRICS *(Mn metres)*													
Ceylon *(Mn sq. metres)*	0.4	0.4	0.6	0.4	0.5	0.6	0.5	0.6	0.6	...	...	...	...
China (Taiwan)	13.8	13.6	11.6	13.0	12.2	13.0	13.9	12.9	13.4	13.2	14.9	15.0	15.3
India	381	388	404	405	375	374	370	378	378	375	377	395	398
Indonesia	3.8	4.2	4.4	4.7	4.6	3.4	2.5	3.0	3.7	4.9	...	...	...
Japan *(Mn sq. metres)*	222	210	242	268	218	230	231	228	245	252	270	271	264
Korea, Republic of *(Mn sq. metres)*	8.0	8.4	10.2	13.8	10.4	11.0	11.7	11.0	10.5	10.3	11.0	10.5	9.6
Pakistan	26.5	34.5	38.1	40.2	43.9	47.3	45.1	47.5	47.5	48.2	...	...	...
Philippines	1.1	0.9	1.4	1.2	0.9	0.8	0.9	0.8	0.6	0.6	0.4	0.3	...
Thailand	...	3.1	4.4	4.1	...	...	...	...	...	...	...	...	...
JUTE MANUFACTURES													
China (Taiwan) (Gunny bags *Mn pieces*)	0.75	0.90	1.05	1.01	0.73	1.41	1.32	1.19	1.76	1.47	1.53	1.46	...
India	78.6	87.0	92.5	87.2	89.9	89.0	86.0	91.1	91.2	89.4	92.0	88.2	95.7
Pakistan	4.5	7.5	12.1	12.6	14.5	19.0	18.3	20.0	21.8	22.4	22.7	22.4	24.2
Thailand (Gunny bags *Mn pieces*)	0.05	0.28	0.36	0.40	0.45	*0.47*	*0.47*	*0.47*	*0.47*	...	...	...	...

3. PRODUCTION OF SELECTED COMMODITIES *(Cont'd)*

Monthly averages or calendar months

Thousand tons

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
PAPER[i]													
China (Taiwan)	2.5	2.8	3.6	5.0	6.0	7.1	7.0	7.0	7.7	7.5	8.3	8.0	...
India	8.7	10.1	10.4	10.7	13.1	15.0	12.7	16.2	17.5	18.0	...	...	...
Japan	101.7	116.1	129.6	145.7	147.4	181.9	178.7	185.8	193.3	193.1	...	...	...
Korea, Republic of	0.5	0.6	0.6	0.7	1.0	1.8	1.7	1.9	2.1	2.3	1.9	1.5	1.9
Pakistan	...	1.1	1.4	1.7	1.4	1.6	1.7	1.8	1.1	1.6	1.5	...	...
Thailand	0.17	0.17	0.25	0.23	*0.23*	*0.22*	*0.22*	*0.22*	*0.22*	...	...	...	...
VEGETABLE OILS													
China (Taiwan): Edible oil	0.7	0.8	0.9	1.0	1.1	1.1	0.7	1.4	1.2	1.0	0.9	1.8	...
Federation of Malaya: Coconut oil	8.2	8.0	9.2	8.2	6.7	5.7	6.2	6.6	6.0	5.5	6.3	6.5	6.6
Palm oil	4.6	4.8	4.7	5.0	6.0	6.1	5.5	7.0	6.1	7.0	8.1	9.8	8.1
India: Edible oil (Vanaspati)	19.5	22.1	21.6	25.5	25.0	26.8	28.3	24.7	28.3	32.9	28.9	25.9	...
Indonesia: Palm oil	14.1	13.8	13.7	13.4	12.3	11.5	11.1	13.4	11.9	10.0	11.7	14.3	12.9
Japan: Coconut oil	1.6	2.3	2.0	2.4	2.2	2.8	3.3	2.2	3.4	3.4	4.0	4.1	3.7
Others	9.0	13.0	15.1	16.3	19.9	20.6	19.1	24.5	19.3	21.8	20.6	24.1	21.2
Pakistan: Vegetable oil	0.9	1.2	1.4	1.5	1.7	2.3	2.2	2.3	2.4	2.5	2.9	...	...
Philippines: Coconut oil	12.2	13.3	*17.7*	27.8	19.1	15.8	...	...	...	...	...	...	...
Singapore: Coconut oil	3.2	2.8	3.4	4.1	2.6	1.7	1.3	1.9	2.3	1.8	1.9	2.4	2.1
SUPERPHOSPHATES[j]													
China (Taiwan)	6.5	6.7	8.4	8.6	8.7	9.9	9.6	10.1	10.1	7.7	10.6	9.6	11.5
India	8.9	6.3	6.9	12.0	14.0	21.1	17.9	26.7	24.0	31.5	29.7	...	...
Japan	143.5	149.6	171.5	155.3	146.5	153.9	164.4	132.8	154.0	189.8	188.2	133.7	...
Pakistan	...	...	...	...	0.09	0.13	0.10	—	0.11	0.16	—	1.9	...
AMMONIUM SULPHATE													
China (Taiwan)	0.4	0.4	0.6	1.3	1.5	1.8	1.9	1.7	1.9	1.7	1.7	1.9	1.9
India	28.9	33.3	32.9	32.1	32.5	32.9	29.4	32.9	32.0	32.4	29.7	...	...
Japan	172.9	177.4	193.6	206.7	217.5	219.5	239.6	218.7	194.6	205.4	198.0	182.3	...
Pakistan	...	...	...	...	1.7	3.6	4.0	3.0	3.5	4.1	4.0	...	...
PETROLEUM PRODUCTS[k]													
Burma	10.2	10.7	11.4	18.2	25.0	27.6	29.0	26.3	29.4	32.1	29.5	...	...
China (Taiwan, *thousand Kilolitres*)	37.0	51.0	52.8	55.8	56.7	68.1	76.9	66.8	65.3	78.4	76.9	91.1	85.7
Indonesia	825.8	863.9	859.0	911.1	847.8	917.2	919.8	912.9	923.0	...	...	...	...
Iran	234.2	606.2	919.2	1,251.7	1,302.9	1,307.4	1,253.3	1,311.7	1,374.7	1,405.0	...	...	...
Japan (*thousand Kilolitres*)	616.7	717.8	984.1	1,212.6	1,346.5	1,820.9	1,719.7	1,802.8	2,216.6	2,406.0	2,472.7	2,394.4	2,316.3
Pakistan	6.2	6.3	7.0	7.2	7.4	...	7.1	7.6	...	...	...	...	...
CEMENT													
Burma	4.9	5.0	3.2	3.1	3.0	3.0	2.9	2.5	3.5	3.4	4.7	4.0	2.6
Ceylon	7.0	7.1	7.1	4.1	6.7	7.9	6.8	7.2	8.0	7.2	...	...	...
China (Taiwan)	44.7	49.2	49.2	50.3	84.6	89.0	92.9	88.3	87.2	96.3	95.5	93.5	87.1
Federation of Malaya	7.2	9.1	8.7	9.5	9.2	16.0	14.6	17.6	20.9	19.2	23.0	24.9	29.0
Hong Kong	8.4	9.7	10.1	8.7	12.7	11.8	13.7	7.9	12.0	13.0	12.1	10.0	11.8
India	372.0	379.9	417.2	474.3	513.6	576.7	598.5	552.2	619.2	655.4	654.1	620.4	628.0
Iran	5.4	11.0	18.7	26.1	34.2	44.4	...	...	...	...	...	...	...
Japan	889.6	879.7	1,085.3	1,264.7	1,249.0	1,439.0	1,428.0	1,441.0	1,673.0	1,672.0	1,869.0	1,786.0	1,902.0
Korea, Republic of	5.1	4.7	3.8	7.7	24.6	29.8	27.9	34.2	35.4	34.4	34.8	37.2	37.0
Pakistan	57.0	57.7	65.4	91.3	90.8	82.8	90.7	73.8	79.9	91.8	99.0	67.0	...
Philippines	26.4	34.1	37.2	42.6	53.5	60.8	69.2	64.9	55.9	65.5	65.5	...	...
Thailand	31.9	32.2	33.1	33.5	38.0	40.1	42.9	39.9	38.8	39.5	38.8	37.3	34.5
STEEL (ingots and metal for castings)													
China (Taiwan)	4.1	4.8	6.0	7.4	8.9	13.2	12.0	12.4	17.5	15.1	16.5	16.9	18.2
India	142.7	144.3	147.1	145.2	153.5	206.0	195.4	207.0	235.7	263.2	247.9	247.0	...
Japan	645.0	784.0	925.5	1,047.5	1,009.8	1,385.7	1,325.0	1,453.6	1,588.7	1,714.9	1,788.8	1,845.1	1,864.0
Korea, Republic of	...	...	...	1.4	1.6	3.2	4.3	2.8	3.2	5.0	3.2	4.7	4.9
Pakistan	0.8	0.9	0.9	1.4	0.8	0.8	0.7	0.7	1.0	0.9	0.5	0.6	0.3
TIN METAL (*tons*)													
Federation of Malaya	6,025	5,980	6,203	6,036	3,838	3,872	3,325	4,163	4,479	5,358	6,052	6,873	8,394
ELECTRICITY[m] (*million kWh*)													
Afghanistan	2.83	2.87	2.97	4.10	...	...	...	...	...	...	...	...	...
Brunei	0.13	0.18	0.28	0.41	0.55	...	...	...	...	...	...	...	...
Burma	6.2	7.7	9.3	12.3	15.1	17.6	19.1	19.8	19.9	19.5	20.6	...	...
Cambodia	2.08	2.31	2.75	3.16	3.60	405	4.14	4.01	4.24	4.41	4.61	4.89	...
Ceylon	14	15	18	17	20	22	21	22	23	23	25	26	...
China (Taiwan)	150	164	187	213	237	268	262	276	294	266	306	324	313
Federation of Malaya[p]	73	79	84	89	74	77	74	78	85	92	97	102	103
Hong Kong	41	47	54	62	68	79	76	87	83	81	90	100	107
India	627	716	803	906	1,031	1,213	1,207	1,249	1,267	1,287	1,364	1,343	...
Indonesia	66	72	75	82	...	...	...	...	...	...	...	...	...
Iran[*p]	...	48	50	52	54	...	...	...	...	...	...	...	...
Japan[p]	4,967	5,433	6,011	6,476	6,656	7,939	7,866	8,096	8,500	8,372	9,202	9,546	7,407
Korea, Republic of	75	73	93	110	126	141	138	134	152	144	138	146	144
Laos	0.13	0.16	0.23	0.28	0.29	...	...	...	...	...	...	...	...
Pakistan	41	51	64	78	...	...	...	...	...	...	...	...	...
Philippines (Manila)	58	65	77	93	107	125	126	131	131	134	139	145	...
Singapore	27	31	36	41	47	51	51	52	53	52	54	56	57
Thailand (Bangkok)[q]	13	16	18	22	23	27	26	27	29	27	...	...	...
Viet-Nam, Republic of	15	17	18	18	20	22	22	22	23	23	24	25	...

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a. Including latex.

b. Lignite. c. Including lignite.

d. Specific gravity: *Brunei, Burma, Iran, Pakistan* and *Sarawak*, 0.84; *Indonesia*, 0.85; *Japan*, 0.90.

e. Approximate metal content of ores as follows: *Federation of Malaya*, 60%; *Hong Kong*, 45%; *India*, 65%; *Japan* and the *Philippines*, 55%; *Korea*, 45-57%.

f. Including iron sand.

g. Production in government licensed plants only.

h. Annual figures relate to crop year for the Philippines and Thailand, but calendar year for other countries.

i. Paper excluding paper board: *India*, printing and writing; *Japan*, foreign style; *Korea*, newsprint; *Pakistan*, printing other than newsprint and writing.

j. 16% P_2O_5 content.

k. Comprising motor spirit, kerosene and diesel oil for Burma; gasoline, diesel oil, kerosene and fuel oil for China (Taiwan); motor spirit, aviation spirit, kerosene, heavy oil, wax and paraffin, asphalt and cutback for Indonesia; motor spirit, kerosene, distillate fuel oils and residual fuel oil (prior to 1957) for Iran; gasoline, diesel oil, kerosene, fuel oil, gas oil, lubricating oil and others for Japan; motor spirit and kerosene for Pakistan.

m. Gross production by enterprises generating primarily for public use.

p. Including production by industrial establishments generating primarily for own use.

q. Consumption of electricity; Bangkok Electric Works and Sam Sen Power Station.

4. CONSTRUCTION—NEW BUILDING

Monthly averages or calendar months

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
Ceylon: completed[a]													
(Floor area—*thousand sq metres*)													
Residential	7.22	6.72	6.49	5.97	1.88	3.95	3.23	3.81	4.67	...	...	...	...
Non-residential	2.70	2.02	2.20	2.54	1.46	3.08	3.00	3.38	3.13	...	...	...	...
China (Taiwan): completed													
(Floor area—*thousand sq metres*)													
Public	4.81	6.15	4.71	5.68	8.41	6.26	6.29	3.47	6.71	9.72	14.2	7.3	...
Private	25.67	32.73	23.55	26.67	35.85	24.13	24.39	26.58	20.96	20.90	27.3	8.2	...
Hong Kong: completed													
(Cost—*thousand Hong Kong dollars*)													
Residential	4,236	8,902	8,654	10,267	10,489	13,982	14,219	12,788	18,243	23,456	23,812	28,453	14,006
Industrial	671	862	815	1,016	2,330	1,488	675	1,903	1,688	2,571	3,388	2,170	2,465
Commercial	886	336	1,438	1,204	2,438	1,279	637	410	3,950	3,597	1,833	19,894	15,944
Others	1,807	1,845	2,197	1,696	4,847	1,746	941	1,963	2,820	1,934	4,806	6,031	829
Japan: started													
(Floor area—*thousand sq metres*)													
Residential	1,400	1,454	1,752	1,870	1,933	2,145	2,152	2,327	2,362	1,847	2,599	2,841	...
Non-residential	1,367	1,328	1,665	1,775	1,593	2,093	1,925	2,201	2,512	2,092	2,700	2,755	...
Korea, Republic of: permits issued													
(Floor area—*thousand sq metres*)													
Residential	...	13[b]	27	22	37	60	82	85	57	27	76	50	57
Non-residential	...	53[b]	65	66	67	83	113	98	74	56	86	50	64
Philippines:[c] **permits issued**													
(Value—*thousand pesos*)													
Residential	850	1,295	1,596	1,732	1,807	1,547	2,012	1,386	1,321	970	1,599	...	...
Non-residential	1,620	1,857	2,298	3,122	2,194	3,620	3,098	2,590	3,955	2,886	3,214	...	...
Singapore: completed *(Number of dwelling units)*													
Public[d]	239	279	184	124	340	172	...	...	...	...	...	...	...
Private[e]	120	200	186	156	145	134	16	211	48	61	49	31	58
Thailand:[f] **permits issued** *(Number of buildings)*													
Residential	214	244	201	204	226	163	163	149	158	213	261	224	...
Non-residential	72	72	64	44	27	21	20	10	28	31	32	33	...
Viet-Nam,[g] **Republic of**													
(Floor area—*thousand sq metres*)													
Apartments	12.75	6.36	7.10	4.41	7.99	10.21	4.63	12.66	15.32	9.22	7.19	5.89	11.1
Houses	11.22	5.10	3.35	3.92	5.23	8.11	6.73	8.78	6.85	16.51	11.28	8.53	12.1
Others	4.09	2.10	2.82	1.99	2.80	4.20	2.71	8.37	3.16	3.66	4.68	0.24	17.0

[a] Excluding particulars of buildings under building schemes.
[b] December.
[c] Manila only.
[d] Comprising buildings erected by or on behalf of Public Works Department, Singapore Improvement Trust and City Council.
[e] Quarterly figures exclude buildings erected in city area which are not available.
[f] Bangkok only.
[g] Saigon-Cholon only.

5. VOLUME OF TRAFFIC: RAILWAYS, SEA-BORNE SHIPPING AND CIVIL AVIATION

Monthly averages or calendar months

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
RAILWAYS[a]													
Passenger-kilometres (*million*)													
Burma†	57	66	70	79	89	108	129	103	126	131	...	...	...
Cambodia	4	5	6	7	6	6	6	6	6	7	8	...	...
Ceylon†	116	115	123	127	...	...	...	...	...	...	...	...	...
China (Taiwan)	186	211	237	287	308	308	319	272	311	324	297	299	219
Hong Kong	6	7	9	10	9	11	10	10	12	14	14	...	...
Fed. of Malaya and Singapore	47	49	50	52	49	50	50	47	50	52	49	47	...
India‡	5,040	5,039	5,469	5,584	5,617	5,749	6,114	5,401	5,680	6,346	6,474	...	...
Indonesia	335	421	388	395	460	552	...	...	...	...	...	...	...
Iran	34	39	37	72	...	...	...	...	...	...	...	...	...
Japan‡	7,253	7,603	8,173	8,437	8,851	9,516	9,284	9,591	9,430	9,758	10,187	10,196	11,550
Korea, Republic of	325	309	337	286	348	372	378	382	397	390	391	395	...
Pakistan‡	772	788	860	901	905	960	983	955	919	985	...	...	...
Philippinesø	35	37	43	49	58	62	76	56	67	64	78	...	...
Thailand	196	167	155	164	164	154	168	126	147	217	222	153	173
Viet-Nam[b]	11	31	32	37	36	43	38	43	48	50	48	44	...

TRANSPORT

5. VOLUME OF TRAFFIC: RAILWAYS, SEA-BORNE SHIPPING AND CIVIL AVIATION *(Cont'd)*

Monthly averages or calendar months

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
RAILWAYS[a] *(Cont'd.)*													
Freight ton-kilometres (*million*)													
Burma†	44	53	51	52	52	59	65	60	55	71	...	...	...
Cambodia	5	2	4	5	5	7	9	5	6	8	6	...	...
Ceylon†	22	22	24	25	22	25	23	27	28	24	...	...	...
China (Taiwan)[c]	122	137	142	159	158	155	168	118	170	170	172	169	93
Fed. of Malaya and Singapore	32	33	37	36	32	46	42	50	55	60	59	...	...
Hong Kong	0.33	0.51	0.65	0.57	0.66	0.75	0.49	0.75	1.02	0.74	0.84	...	...
India‡	4,351	4,613	5,203	5,963	6,158	6,276	5,840	6,229	6,319	7,821	5,981	...	...
Indonesia	81	88	87	87	89	87	...	...	...	...	...	...	...
Iran	99	104	113	125	121	161	188	151	167	167	170	...	...
Japan‡	3,277	3,500	3,859	3,971	3,727	4,082	3,973	3,841	4,431	4,115	4,362	4,261	4,199
Korea, Republic of	155	156	169	197	204	234	235	221	261	245	254	253	...
Pakistan‡	449	469	529	557	596	613	652	498	608	695	...	...	...
Philippinesø	12	13	12	13	17	15	16	15	15	16	19	...	...
Thailand	57	65	76	85	91	100	106	87	97	115	113	104	93
Viet-Nam[b]	12	|| 7	5	7	7	10	9	10	12	13	15	14	...
INTERNATIONAL SEA-BORNE SHIPPING													
Freight loaded (L) and unloaded (U) in external trade *(thousand tons)*													
Ceylon L	92	88	82	83	69	63	65	60	77	59	65	57	69
U	203	191	205	268	280	321	284	274	410	409	325	309	404
China (Taiwan) L	85	106	104	111	149	147	163	106	133	160	160	161	...
U	142	155	177	193	189	203	209	221	190	213	220	261	...
Fed. of Malaya L	183	226	284	310	258	345	442	445	308	290	612	549	558
U	193	231	241	235	221	226	223	228	243	243	270	273	291
Hong Kong L	126	141	162	143	164	166	159	166	190	188	178	182	159
U	303	347	386	426	443	458	449	471	494	498	472	499	552
Indonesia L	1,068	1,040	1,096	1,500	1,412	1,067	2,027	931	642	1,407	1,279	1,381	399
U	326	389	488	526	292	292	341	337	263	254	218	189	269
Iran*[d] L	292	1,199	1,181	1,686	...	2,363	2,502	2,151	2,404	2,394	2,392	2,240	2,603
U	65	89	72	84	...	106	105	107	102	108	131	53	66
Japan[e] L	476	624	681	645	726	790	801	781	805	819	853	807	868
U	2,794	3,058	3,870	4,890	4,093	5,411	5,568	5,613	6,185	6,635	6,854	7,617	7,357
Korea, Republic of L	9	8	11	15	10	15	28	15	8	10	27	25	...
U	82	171	74	104	98	96	95	87	80	100	363	153	...
Pakistan L	101	124	120	100	92	121	114	99	159	134	...	...	...
U	218	236	335	382	373	323	271	322	324	499	...	...	...
Philippines L	442	483	587	494	466	...	...	...	...	...	...	...	...
U	251	280	347	297	242	...	...	...	...	...	...	...	...
Singapore L	450	510	552	554	483	430	443	446	441	418	419	422	509
U	769	883	921	958	855	773	756	813	768	745	800	641	845
Thailand (Bangkok) L	138	161	164	186	162	175	162	156	233	216	186	188	212
U	108	116	126	138	142	154	158	150	154	160	167	186	123
Viet-Nam (Saigon) L	36	39	28	47	40	52	53	60	54	82	75	69	74
U	126	112	108	115	125	141	140	154	146	132	145	143	135
Entrances (E) and clearances (C) of vessels with cargo in external trade *(thousand net registered tons)*													
Burma[f] E	124	113	115	109	150	144	116	139	157	163	...	...	...
C	150	159	158	168	162	172	140	200	189	190	...	...	...
India E	753	806	829	947	1,014	1,079	994	1,129	1,081	1,061	...	...	...
C	800	702	737	702	812	960	1,017	954	884	812	...	...	...
CIVIL AVIATION[g]													
Passenger-kilometres (*million*)													
Burma	4.55	5.11	4.99	3.36	3.89	3.81	4.88	3.28	3.00	4.1	5.2	...	...
Ceylon	0.77	0.79	2.45	3.28	3.81	4.04	3.65	4.81	4.11	4.0	4.0	3.8	4.2
China (Taiwan)	3.64	3.85	3.99	4.50	4.55	5.48	5.83	6.33	5.42	4.67	5.49	5.02	5.85
India	36.70	42.92	56.60	65.13	72.0	78.23	77.1	76.8	82.31	78.13	89.32	...	...
Indonesia	15.01	19.87	22.40	23.34	16.16	21.40	20.23	22.48	22.93	...	...	...	...
Iran	*1.60*	2.58[h]	2.84[h]	3.06	...	...	...	...	...	...	...	...	...
Japan	19.47	27.43	37.96	47.37	57.19	70.18	72.21	82.63	72.37	...	...	...	...
Pakistan	4.88	9.21	12.03	17.71	19.12	21.10	21.48	23.51	21.92	24.22	28.59	28.88	...
Philippines	10.84	10.08	11.74	13.94	15.61	19.75	22.12	17.57	20.36	23.88	28.09	...	...
Thailand	3.35	4.14	5.01	6.53	4.18	3.56	3.85	3.06	3.96	3.38	3.50	...	...
Freight ton-kilometres (*thousand*)													
Burma	181	112	94	66	73	76	80	84	74	83	83	...	...
Ceylon	12	14	118	144	120	161	157	178	186	164	166	*186*	...
China (Taiwan)	199	203	162	165	168	180	193	165	174	163	153	136	157
India	2,357	2,879	3,215	3,225	3,402	3,473	3,408	3,449	3,682	3,485	3,678	...	...
Indonesia	621	662	729	762	453	476	452	472	499	415	451	*464*	*487*
Iran	*17*	50[h]	105[h]	72	...	...	...	...	...	...	...	...	...
Japan	258	508	762	942	1,215	1,614	1,373	1,618	2,126	...	...	...	...
Pakistan	147	214	260	357	543	1,145	1,084	1,161	1,374	1,351	1,411	1,437	...
Philippines	361	315	335	386	347	407	387	404	449	431	417	...	...
Thailand	151	107	112	156	73	41	42	40	41	34	58	...	...

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a. Railway traffic coverage: China *(Taiwan)*, Taiwan Railway Administration; *India* and *Pakistan*, class I railways; *Japan*, State Railways only; *Philippines*, Manila Railroad Company.

b. From August 1954, Republic of Viet-Nam only.

c. Including service traffic.

d. Caspian Sea traffic included.

e. Excluding military and charity goods and transit traffic, including imports and exports by air and parcel post, and prior to 1955, including also trade in ships delivered as goods without being loaded on other ships.

f. Total number of entrances and clearances made during each voyage but excluding sailing vessels.

g. Scheduled domestic and international routes.

h. Including non-scheduled and/or non-revenue operations.

6. VALUE OF EXPORTS AND IMPORTS AND BALANCE OF TRADE

Monthly averages or calendar months

Millions

		Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance
		BRUNEI (*Malayan dollar*)			BURMA (*kyat*)			CAMBODIA (*riel*)			CEYLON (*rupee*)			CHINA (Taiwan) (*NT dollar*)			FEDERATION OF MALAYA[a] (*Malayan dollar*)		
																ICA imports			
954		22.8	8.3	+14.5	100	81	+19	184	172	+12	151	116	+35	121	275	125	135	110	+ 25
955		25.3	8.7	+16.6	90	72	+18	117	139	−22	162	122	+40	160	262	127	198	129	+ 69
956		27.5	9.5	+18.0	98	78	−20	107	165	−58	144	135	+ 9	244	400	166	188	146	+ 42
957		28.3	9.0	+19.3	91	117	−26	151	170	−19	140	150	−10	306	438	172	182	151	+ 31
958		27.2	7.4	+19.8	77	81	− 4	154	222	−68	142	143	− 1	322	467	138	157	138	+ 19
959		25.8	5.2	+20.6	89	88	+ 1	167	201	−34	146	167	−21	476	702	212	206	145	+ 61
959	II	24.9	4.7	+20.2	85	77	+ 8	207	165	+42	143	145	− 2	568	762	237	185	137	+ 48
	III	25.1	5.2	+19.9	111	86	+25	189	229	−40	146	215	−69	289	831	248	222	151	+ 71
	IV	25.0	4.9	+20.1	87	109	−22	170	227	−57	161	184	−23	478	665	219	242	165	+ 77
960	I	22.4	5.2	+17.2	113	106	+ 7	185	275	−90	170	164	+ 6	490	686	163	247	169	+ 78
	II	21.1	5.4	+15.7	112	99	+13	139	264	−125	147	156	− 9	557	1,073	472	245	175	+ 70
	Jul	...	...	...	104	114	−10	*297*	*309*	*−12*	140	171	−31	359	1,086	460	242	183	+ 59
	Aug	...	...	...	66	110	−44	*189*	*242*	−53	167	206	−39	414	1,142	553	*258*	*198*	+ *60*
		HONG KONG (*HK dollar*)			INDIA (*rupee*)			INDONESIA[d] (*rupiah*)			IRAN[e] (*1,000 Mn rial*)			JAPAN[f] (*1,000 Mn yen*)			KOREA,[g] Republic of (*US dollar*)		
				Exports, domestic												Special procurement			
1954		202	286	57	469	515	− 46	823	598	+225	1.02	1.88	−0.86	48.9	72.0	7.2	2.0	20.6	−18.6
1955		212	310	61	506	561	− 55	898	600	+298	1.46	2.25	−0.79	60.3	74.1	5.2	1.5	28.7	−27.2
1956		268	381	65	516	685	−169	851	817	+ 34	1.99	2.09	−0.10	75.0	96.9	5.0	2.1	32.4	−30.3
1957		252	429	62	547	890	−343	921	763	+158	2.30	2.62	−0.32	85.7	128.5	6.9	1.9	37.2	−35.3
1958		249	383	105[b]	485	732	−247	718	488	+230	2.57	3.78	−1.21	86.3	91.0	4.3	1.4	31.5	−30.1
1959		273	412	190	519[c]	740[c]	−221	829	436	+393	3.08	4.96	−1.88	103.7	108.0	4.7	1.6	23.6	−22.0
1959	II	271	407	191	439	818	−379	1,041	427	+614	*0.39*	*3.22*	*−2.83*	97.4	113.6	9.7	2.4	20.7	−18.3
	III	281	435	196	559	646	− 87	786	425	+361	*0.52*	*3.35*	*−2.83*	106.0	108.3	5.0	1.6	26.6	−25.0
	IV	320	474	222	637	682	− 45	915	556	+359	*0.80*	*3.32*	*−2.52*	123.9	115.2	2.3	1.3	23.2	−21.9
1960	I	325	487	236	518	691	−173	3,211	1,811	+1,400	...	...	...	106.3	135.6	3.4	1.4	20.3	−18.9
	II	322	490	241	494	834	−340	3,301	2,113	+1,188	...	...	...	115.1	133.4	9.1	2.8	27.2	−24.4
	Jul	345	466	252	485	737	−252	3,240	1,876	+1,364	...	...	...	122.3	136.7	8.4	2.3	18.6	−16.3
	Aug	329	485	244	570	827	−257	1,917	2,350	−433	...	...	...	123.0	132.6	1.7	2.1	28.0	−25.9
		LAOS (*kip*)			NORTH BORNEO (*Malayan dollar*)			PAKISTAN (*rupee*)			PHILIPPINES[i] (*peso*)			SARAWAK (*Malayan dollar*)			SINGAPORE[a] (*Malayan dollar*)		
1954		3	47	− 44	6.4	6.2	+0.2	99	92	+ 7	66.8	79.8	−13.0	35.5	33.2	+ 2.3	224	252	−28
1955		4	55	− 51	8.7	7.3	+1.4	125	90	+35	66.8	91.3	−24.5	39.8	36.8	+ 3.0	281	322	−41
1956		4	103	− 99	10.1	9.8	+0.3	135	166	−31	75.5	84.4	− 8.9	40.6	38.7	+ 1.9	286	327	−41
1957		3	122	−119	10.0	10.1	−0.1	134	174	−40	71.8	102.2	−30.4	41.6	38.6	+ 3.0	290	338	−48
1958		5	87	− 82	10.9	10.7	+0.2	118	157	−39	82.1	93.1	−11.0	38.6	36.1	+ 2.5	262	312	−50
1959		7	86	− 79	14.8	13.0	+1.8	127	140	−13	88.2	84.9	+ 3.3	44.4	37.9	+ 6.5	287	326	−39
1959	II	8	78	− 70	14.0	13.7	+0.3	108	103	+ 5	90.1	84.8	+ 5.3	42.3	36.7	+ 5.6	286	325	−39
	III	8	90	− 82	16.0	13.6	+2.4	113	145	−32	98.7	87.1	+11.6	*45.9*	*38.8*	+ *7.1*	298	332	−34
	IV	8	91	− 83	17.7	14.4	+3.3	172	175	− 3	91.5	97.7	− 6.2	*44.9*	*39.6*	+ *5.3*	316	350	−34
1960	I	8	111	−103	16.9	14.5	+2.4	157	218	−61	89.6	86.4	+ 3.2	43.2	36.6	+ 6.6	299	348	−49
	II	6	112	−106	19.1	16.9	+2.2	172	282	−110	113.4	96.3	+17.1	44.4	37.2	+ 7.2	300	344	−44
	Jul	...	...	...	18.0[h]	16.6[h]	+1.4[h]	81	238	−157	...	...	...	...	...	...	290	326	−36
	Aug	...	...	...				...	...	...	...	...	...	...	...	...	*301*	*299*	+ *2*
		THAILAND (*baht*)			VIET-NAM[j] (*piastre*)														
1954		515	585	− 70	164	946	−782												
1955		593	625	− 32	202	768	−566												
1956		577	640	− 63	132	635	−503												
1957		628	711	− 83	235	842	−607												
1958		537	686	−149	161	677	−516												
1959		631	737	−106	219	655	−436												
1959	II	563	732	−169	170	652	−482												
	III	643	746	−103	256	646	−390												
	IV	703	819	−116	313	782	−469												
1960	I	751	816	− 65	197	698	−501												
	II	662	763	−101	258	691	−433												
	Jul	611	772	−161	249	623	−374												
	Aug	728	807	− 79	391	727	−336												

General Notes: Special trade system for Cambodia, China (Taiwan), Indonesia, Iran, Republic of Korea, Laos, North Borneo, Sarawak and Viet-Nam; general trade for other countries. Figures on imports include aid unless otherwise specified.

a. Including trade between Singapore and Federation of Malaya.

b. For 1958 only, products wholly or principally of Hong Kong origin.

c. Including revisions not distributable by quarters.

d. Data compiled and published in rupiah at the official rate. Beginning 25 August 1959, the exchange rate was fixed at 45 rupiah per US dollar and the system of export certificates previously in effect was abolished.

e. Years beginning 21 March. Including value of exchange certificates, From 1959, quarterly figures on exports exclude petroleum; for 1959, quarterly data on imports exclude "official" imports.

f. Data on Special procurement not included in trade statistics.

g. Prior to 1955, figures based on foreign exchange settlements at the Bank of Korea. From 1955 onwards, government imports are still based on exchange settlements, but exports and private imports are based on data of Bureau of Customs.

h. Average of July-September.

i. Imports valued f.o.b.

j. Prior to January 1955, excluding trade with Cambodia and Laos but including transit trade of these countries with other countries through Viet-Nam. Beginning June 1955, trade of the Republic of Viet-Nam only.

7. DIRECTION OF INTERNATIONAL TRADE

Quarterly averages or quarters

Million dolla

Area of origin for imports and area of destination for exports	Year and Quarter	BURMA		CAMBODIA		CEYLON		CHINA (Taiwan)		FEDERATION OF MALAYA		HONG KONG		INDIA		INDONESIA	
		Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp
1. All countries	1953	59.4	44.2	...	...	82.3	84.5	31.9	45.5	75.2	73.1	120.8	170.6	279.0	300.2	210.0	191
	1954	62.1	51.1	...	...	95.0	73.4	23.3	52.8	76.2	66.1	120.3	164.9	295.6	323.8	214.0	157
	1955	56.7	45.2	10.0	11.9	101.8	76.7	30.8	50.2	112.3	78.1	127.5	180.0	319.1	353.4	236.4	157
	1956	61.5	49.4	9.3	13.7	91.1	85.8	29.6	48.4	117.0	186.2	163.0	221.2	312.8	427.2	220.5	213
	1957	52.5	74.0	12.9	14.6	88.3	94.7	37.1	53.1	114.2	90.0	149.8	243.0	337.5	538.6	242.4	199
	1958	45.3	50.8	13.9	18.7	86.7	90.1	39.0	56.6	101.7	81.3	141.1	211.5	304.0	453.7	188.8	128
	1959	54.7	55.7	14.4	16.5	88.8	105.3	39.2	57.9	136.4	83.3	157.3	229.8	327.0	465.9	218.1	114
	II	53.0	47.8	17.8	12.7	86.3	91.0	46.9	62.9	124.3	78.7	158.9	227.8	278.3	527.7	267.2	112
	III	66.6	54.3	16.2	19.6	89.5	135.0	23.7	68.5	147.6	86.7	159.5	238.5	352.2	457.4	209.2	111
	IV	54.4	68.8	14.5	19.5	97.9	101.8	39.5	54.9	158.1	96.7	179.6	261.2	397.2	469.3	239.0	146
	1960 I	71.4	67.0	15.9	23.6	104.3	103.7	40.4	56.6	171.6	100.2	184.6	270.4	321.7	441.4	214.1	120
	II	70.5	62.4	11.9	22.5	88.4	98.0	46.0	88.5	165.7	102.9	179.9	264.1	313.5	524.3	219.9	140
2. ECAFE countries[a] (including Japan)	1953	45.0	22.9	...	...	16.6	34.9	21.8	17.5	13.5	35.2	90.0	93.4	54.4	42.5	72.2	78
	1954	52.2	26.3	...	...	19.0	32.6	18.8	20.7	14.0	31.9	72.5	76.1	48.7	62.4	86.0	64
	1955	40.4	22.0	4.3	7.4	15.4	35.0	25.6	18.0	16.1	38.7	69.0	91.7	62.4	70.2	81.1	48
	1956	45.5	23.1	3.3	8.8	17.4	39.6	23.0	19.9	20.7	40.6	93.1	115.6	55.5	76.6	85.2	77
	1957	39.0	35.8	5.3	8.3	15.9	43.6	28.9	20.6	28.2	43.4	75.8	120.7	56.7	97.0	105.6	68
	1958	34.1	26.4	4.9	9.5	8.5	38.8	31.2	25.2	26.3	40.5	62.9	114.9	54.0	86.2	88.2	51
	1959	38.3	29.8	5.0	9.1	9.9	42.4	30.9	26.6	34.7	42.2	57.3	119.8	61.8	74.9	91.5	50
	II	33.6	24.8	6.1	6.0	9.5	33.6	37.2	29.5	34.8	37.8	57.0	114.6	58.2	60.5	110.1	51
	III	52.4	30.0	3.8	12.3	10.3	54.5	16.0	32.0	39.8	44.4	57.2	126.0	70.9	67.8	91.3	41
	IV	37.3	38.2	7.0	12.1	11.1	45.8	29.3	26.0	40.5	51.5	67.5	140.5	69.6	103.8	90.9	70
	1960 I	51.7	34.0	6.3	11.2	19.6	43.5	30.1	23.1	41.9	53.9	65.3	139.2	57.1	83.7	82.4	64
	II	...	...	4.8	9.3	8.7	57.3	35.9	30.7	42.2	55.6	59.5	130.3	61.1	83.7	99.7	6
3. Japan	1953	11.2	7.3	...	...	0.5	3.6	14.5	13.5	5.0	1.9	9.7	16.8	14.2	6.5	9.4	31.
	1954	14.6	11.2	...	...	0.8	4.0	11.9	17.6	5.3	2.2	5.0	20.3	8.6	8.8	12.5	34.
	1955	11.4	9.6	0.1	1.2	0.6	5.2	18.3	15.3	7.3	3.6	6.4	23.0	13.8	16.9	18.3	21.
	1956	9.4	8.2	0.4	2.6	0.8	6.0	11.0	17.6	9.8	3.8	13.9	35.5	15.7	22.9	18.4	33.
	1957	5.9	17.7	0.3	2.4	1.4	6.8	13.1	17.6	14.4	3.6	10.0	33.4	14.4	28.6	10.0	30
	1958	2.5	12.2	0.1	3.3	2.0	8.2	16.3	22.4	13.4	3.2	5.2	26.1	13.6	20.8	6.8	17.
	1959	2.1	12.6	0.6	2.2	2.2	7.8	14.9	23.4	24.6	4.5	10.1	33.7	18.1	21.5	8.3	17.
	II	2.0	12.3	0.3	1.3	2.3	6.0	16.2	25.8	23.8	3.8	11.0	33.7	18.2	26.5	10.2	18.
	III	1.3	10.1	0.6	3.8	2.1	6.2	3.9	28.4	28.9	4.9	10.4	35.1	20.0	13.5	5.1	16.
	IV	1.5	18.1	1.5	2.0	1.8	9.3	13.9	23.0	29.6	5.2	12.3	40.2	17.6	20.3	10.6	21.
	1960 I	2.9	13.0	1.6	3.5	4.1	8.4	16.7	19.2	28.7	6.7	12.3	41.1	18.1	20.1	9.9	14.
	II	...	...	0.3	2.7	2.7	8.2	19.8	27.3	29.5	6.0	8.9	42.9	22.3	28.4	7.8	[illegible]
4. Western Europe (including UK)	1953	6.4	16.9	...	...	30.4	27.3	3.9	6.3	36.8	28.3	10.5	50.9	102.7	127.8	74.2	65.
	1954	5.4	20.2	...	...	34.8	24.2	1.4	4.5	37.2	27.2	10.6	42.4	122.2	144.2	71.6	52.
	1955	8.8	18.8	3.1	3.7	38.8	26.6	1.7	3.5	58.3	31.4	15.9	41.6	126.6	159.2	79.3	60.
	1956	7.6	18.9	3.1	3.0	35.8	30.2	1.8	4.5	54.8	36.4	18.6	46.9	130.6	219.6	80.8	75.
	1957	4.9	27.2	3.3	4.4	31.6	29.2	1.3	4.9	50.0	36.5	20.7	61.2	119.3	265.6	78.0	73.
	1958	4.4	17.1	3.8	7.3	37.8	30.4	1.5	4.9	42.8	31.9	24.9	46.9	116.2	190.9	47.4	42.
	1959	9.0	18.2	4.8	5.9	36.4	35.9	2.2	5.6	50.5	32.0	29.7	50.5	126.1	206.9	72.0	34.
	II	7.0	16.4	6.6	5.1	49.7	42.6	1.6	5.0	41.4	31.7	29.9	52.7	101.2	233.8	76.4	27.
	III	8.6	17.9	5.0	5.1	23.7	29.4	2.7	7.6	53.2	33.5	29.4	53.8	132.0	198.8	70.0	38.
	IV	12.1	21.8	5.4	6.7	40.0	38.6	3.2	6.3	61.0	36.1	33.8	54.7	167.5	206.3	89.7	44.
	1960 I	10.3	21.8	5.7	8.9	39.3	33.8	1.7	5.5	73.1	34.8	36.6	59.1	125.0	198.8	68.0	30.
	II	...	...	4.5	10.1	36.6	35.7	1.5	13.0	71.4	37.5	39.6	61.1	103.6	242.0	43.2	41.
5. United Kingdom	1953	4.4	11.8	...	...	20.4	19.0	2.1	2.0	18.5	23.1	5.2	20.8	78.5	74.2	4.4	13.
	1954	3.9	12.5	...	...	26.4	15.4	0.7	1.3	14.9	21.3	7.1	16.2	93.1	79.2	9.8	8.
	1955	4.8	11.5	0.2	0.1	26.5	16.2	0.9	0.6	26.5	24.1	11.0	19.3	88.3	84.8	23.0	8.
	1956	4.6	10.4	0.1	0.2	26.3	18.3	0.7	0.8	23.2	27.2	13.0	22.4	96.7	109.1	19.6	12.
	1957	3.2	15.7	—	0.2	24.1	19.4	0.3	0.8	24.6	26.8	14.7	29.2	84.5	125.2	17.6	11.
	1958	3.4	9.4	0.1	0.4	29.7	21.8	0.2	1.0	20.7	24.5	17.2	23.2	87.3	88.5	24.0	6.
	1959	5.0	10.7	—	0.2	25.2	26.0	0.4	0.9	19.2	21.4	20.2	25.1	90.4	90.7	47.7	7.
	II	3.4	9.4	—	0.1	35.1	29.5	0.3	1.2	14.8	21.7	20.6	25.2	68.8	96.2	49.8	6.
	III	4.7	10.2	—	0.2	16.7	21.8	0.4	0.9	24.1	22.5	19.5	26.2	98.1	94.7	47.5	7.
	IV	6.8	13.4	0.3	0.2	27.3	29.3	0.8	0.9	20.6	21.9	22.8	27.4	123.3	95.3	58.2	10.
	1960 I	5.3	11.8	0.2	0.5	27.8	22.4	0.3	1.0	24.0	24.0	24.7	29.9	87.7	96.0	48.3	8.
	II	...	...	0.2	0.5	27.1	24.1	0.3	1.1	30.3	26.0	27.2	29.8	69.4	114.7	16.5	12.
6. Eastern Europe	1953	—	0.2	...	...	0.2	0.6	—	—	1.5	0.2	—	1.0	1.8	2.0	1.1	1.
	1954	0.2	0.6	...	...	0.1	0.6	—	—	1.9	0.2	—	1.0	2.8	4.0	1.8	3.
	1955	5.6	0.4	—	—	0.1	0.4	—	—	2.1	0.2	—	0.8	2.2	4.2	6.7	7.
	1956	5.6	3.8	—	—	0.1	0.4	—	—	4.7	0.3	—	0.8	9.1	13.8	3.0	2.
	1957	4.4	5.2	—	—	0.3	0.4	—	—	3.4	0.4	—	0.6	12.6	19.8	2.2	1.
	1958	2.8	3.4	—	0.2	0.3	0.4	—	—	9.6	0.2	—	0.4	16.0	17.7	2.7	1.
	1959	2.4	2.5	0.2	0.5	1.7	1.3	—	—	18.7	0.2	—	0.5	22.5	16.2	5.0	1.
	II	6.6	2.9	—	0.3	2.8	1.6	—	—	18.1	0.3	—	0.4	22.4	18.1	2.8	3.
	III	1.2	2.0	0.7	0.5	0.3	0.5	—	—	20.0	0.2	—	0.8	21.9	16.4	7.5	2.
	IV	0.6	2.5	0.2	0.8	0.6	0.8	—	—	20.1	0.4	—	0.6	30.4	17.9	8.7	1.
	1960 I	3.2	4.6	—	1.4	2.0	0.8	—	—	9.9	0.3	—	0.8	22.9	13.6	6.0	2.
	II	...	...	0.4	1.0	3.9	0.9	—	—	16.2	0.2	—	0.8	26.5	15.9	6.6	2.

7. DIRECTION OF INTERNATIONAL TRADE *(Cont'd)*

Quarterly averages or quarters

Million dollars

of origin imports nd area estination exports	Year and Quarter	BURMA		CAMBODIA		CEYLON		CHINA (Taiwan)		FEDERATION OF MALAYA		HONG KONG		INDIA		INDONESIA[b]	
		Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
7. h rica	1953	1.1	1.8	...	...	10.8	3.6	1.4	19.4	21.0	2.2	4.3	12.5	58.6	57.0	48.4	35.1
	1954	0.3	2.1	...	...	10.2	2.6	1.3	25.3	18.7	1.5	5.0	14.8	54.2	44.2	36.6	23.0
	1955	0.3	1.4	2.6	0.7	14.5	5.4	1.4	24.6	29.7	1.7	6.4	16.3	61.1	52.2	49.9	24.2
	1956	0.4	1.4	2.5	1.5	12.8	4.2	1.7	20.6	31.7	2.1	7.8	20.6	58.0	53.6	36.2	35.6
	1957	0.9	3.0	2.6	0.8	12.5	4.4	1.4	21.6	26.2	2.5	12.0	25.8	81.3	97.2	37.8	33.7
	1958	0.4	2.2	3.7	1.7	11.6	5.3	2.5	21.6	17.7	1.8	20.6	21.4	61.2	103.4	33.1	20.6
	1959	0.5	2.7	3.5	1.3	13.6	8.3	3.6	21.2	24.9	2.1	33.6	26.3	60.5	115.4	36.5	18.8
	II	0.4	2.4	2.5	1.2	12.9	7.6	3.4	24.9	23.2	2.4	33.9	27.9	54.9	156.6	50.5	21.6
	III	0.4	1.5	6.0	1.7	12.9	11.3	4.2	24.6	26.2	2.1	36.3	27.3	63.5	124.7	30.2	18.5
	IV	0.3	3.9	2.0	1.3	15.7	10.3	4.7	18.0	27.4	2.1	40.5	30.5	63.1	91.0	43.6	22.7
	1960 I	0.2	3.1	2.8	1.9	14.9	5.7	4.4	18.6	35.5	2.3	44.8	35.6	62.4	71.1	44.8	17.1
	II	...	...	1.6	2.0	12.9	2.6	3.9	36.7	24.5	2.7	42.1	44.8	67.8	117.4	53.0	27.1
8. ed States America	1953	1.1	1.8	...	...	6.4	2.7	1.3	17.9	19.0	2.0	3.3	9.9	51.2	47.2	43.0	34.8
	1954	0.3	2.1	...	...	6.2	1.9	1.3	24.6	16.4	1.3	4.1	12.4	46.2	38.8	35.9	22.7
	1955	0.3	1.3	2.6	0.6	9.3	2.4	1.4	23.9	26.7	1.5	5.2	14.3	48.7	47.2	41.8	23.9
	1956	0.4	1.4	2.4	1.4	7.4	2.1	1.7	20.4	28.2	1.8	6.5	18.6	46.0	49.5	35.3	35.3
	1957	0.6	2.9	2.5	0.8	7.8	3.6	1.3	21.2	23.1	2.2	10.0	23.6	69.3	89.4	36.9	33.3
	1958	0.4	2.2	3.7	1.7	7.1	4.0	2.4	21.1	15.2	1.6	15.6	19.2	48.9	84.8	32.6	20.4
	1959	0.5	2.5	3.5	1.2	8.6	7.2	3.4	20.9	21.9	1.8	27.2	22.8	50.2	102.6	35.8	18.4
	II	0.4	2.4	2.5	1.2	7.9	7.2	3.2	24.7	20.8	2.1	27.4	25.5	46.6	145.9	49.4	21.4
	III	0.4	1.5	6.0	1.4	7.7	8.9	4.0	24.3	23.0	1.8	29.1	23.0	51.1	109.0	29.8	18.0
	IV	0.3	3.6	2.0	1.3	9.9	9.3	4.5	17.7	23.4	1.9	33.4	25.6	51.8	75.1	42.9	21.8
	1960 I	0.2	3.1	2.8	1.6	11.1	4.6	4.2	18.0	31.5	1.9	37.3	32.5	53.1	63.9	44.3	16.2
	II	...	...	1.6	2.0	8.1	2.3	3.4	36.2	21.5	2.5	35.8	36.9	58.8	110.6	52.5	26.2
9. n erican ublics	1953	—	—	...	...	0.4	—	0.4	0.1	1.4	—	—	0.4	16.1	1.5	0.4	0.2
	1954	—	—	...	...	0.2	—	0.3	0.2	1.8	—	—	5.0	12.2	4.8	1.4	—
	1955	—	0.2	—	0.1	0.5	2.4	0.1	0.1	2.6	—	—	1.0	11.8	3.0	6.6	0.1
	1956	—	—	—	0.1	0.7	1.7	0.1	—	1.7	0.1	0.1	2.5	8.6	1.3	0.6	2.1
	1957	—	—	—	—	1.0	—	0.1	0.1	3.4	0.1	1.1	1.1	11.4	1.3	0.8	0.1
	1958	—	—	—	—	0.5	—	0.2	0.1	1.7	0.1	1.1	0.8	10.4	0.9	0.6	—
	1959	—	—	—	0.1	0.5	—	—	0.1	3.0	0.1	3.0	1.4	8.0	1.3	0.3	1.6
	II	—	—	—	—	0.4	—	—	—	2.6	0.1	2.9	0.7	4.6	1.1	—	0.1
	III	—	—	—	0.3	0.7	—	—	—	3.1	0.1	3.4	2.6	14.6	1.5	0.3	0.4
	IV	—	—	—	—	0.4	—	—	0.2	3.8	—	3.7	1.3	9.1	2.1	0.5	2.8
	1960 I	—	—	—	0.3	0.4	—	—	—	4.2	0.1	3.2	0.3	5.8	0.8	0.6	1.6
	II	...	...	—	—	0.5	—	—	—	3.6	—	2.9	0.9	7.0	0.9	0.7	0.7
10. eania	1953	—	1.1	...	...	8.7	9.2	0.2	0.6	0.8	6.6	2.1	2.5	10.2	14.5	6.0	4.4
	1954	—	1.0	...	...	11.2	5.6	0.1	0.6	1.5	4.3	3.0	2.8	14.6	8.7	8.6	3.2
	1955	—	1.3	—	—	10.2	4.6	—	0.2	1.9	4.5	3.6	3.7	16.7	11.2	6.3	3.1
	1956	—	1.6	—	—	7.3	5.0	—	0.5	1.6	4.9	3.8	4.8	14.8	7.3	9.4	4.6
	1957	—	1.7	—	—	6.9	5.7	—	0.3	1.5	5.4	4.5	5.2	16.6	10.2	12.1	4.6
	1958	0.1	1.2	—	—	7.9	3.0	0.1	0.6	2.1	5.0	5.0	5.2	14.7	8.6	12.2	1.7
	1959	—	1.6	—	—	7.6	5.1	0.1	0.6	3.2	5.0	5.5	6.2	13.0	6.8	8.4	2.1
	II	—	1.5	—	—	6.3	3.2	0.1	0.5	2.6	4.5	5.2	6.9	11.3	9.4	20.0	1.8
	III	—	1.7	—	—	9.7	4.1	—	0.4	3.7	4.9	6.7	7.1	16.5	5.7	5.4	2.8
	IV	—	1.7	—	—	8.0	7.8	0.1	1.1	4.0	5.2	6.1	5.9	12.5	6.1	4.5	2.7
	1960 I	—	1.2	—	0.1	8.9	4.5	0.1	0.6	4.6	6.6	5.9	6.8	11.7	9.8	9.4	2.3
	II	...	...	—	0.2	7.5	3.3	0.1	1.1	5.7	5.8	6.3	5.6	13.8	7.8	9.4	1.0
11. rling area	1953	34.0	28.2	...	...	39.1	53.5	8.3	6.4	24.5	39.3	32.2	45.4	146.9	145.1	67.8	63.0
	1954	38.8	28.1	...	...	52.6	42.6	5.7	4.3	22.7	24.5	36.2	36.6	167.7	162.5	84.3	45.2
	1955	27.4	23.4	1.6	2.8	54.5	45.3	5.0	2.5	34.9	38.6	42.5	42.4	164.9	162.3	84.9	47.5
	1956	29.1	19.6	2.2	4.3	48.3	46.8	8.3	3.1	32.7	42.8	46.1	48.0	164.1	172.4	84.1	61.0
	1957	32.7	31.9	4.1	4.8	45.8	51.8	11.7	8.4	34.1	42.2	48.6	55.6	157.3	192.0	108.2	57.3
	1958	29.5	20.0	4.3	4.1	46.5	46.0	8.6	7.3	29.2	40.0	50.8	45.1	154.3	161.2	95.6	32.3
	1959	34.0	24.8	3.9	4.6	42.2	57.1	8.6	6.2	29.4	37.6	56.9	56.2	155.5	144.2	118.3	31.0
	II	24.3	20.9	5.4	3.0	41.4	47.2	10.1	6.0	24.2	35.4	56.0	55.9	125.8	147.4	142.4	30.8
	III	54.5	25.4	2.9	6.5	44.6	68.0	8.0	6.5	35.8	41.1	55.2	60.2	167.1	149.9	120.0	31.2
	IV	36.8	30.9	4.4	5.7	46.4	66.1	8.7	5.4	32.5	39.0	66.8	61.4	195.2	151.8	121.0	35.8
	1960 I	37.4	26.8	4.0	5.7	45.8	53.5	8.0	6.6	39.9	41.3	65.8	62.9	146.2	162.5	110.7	35.3
	II	...	...	4.1	5.2	43.5	52.2	12.3	5.7	45.6	41.2	66.8	59.8	133.7	205.1	93.3	38.0
12. AFE rling ntries[a]	1953	26.1	14.9	...	...	3.1	19.6	5.5	3.7	4.8	9.3	20.1	18.5	32.4	32.5	56.0	39.6
	1954	31.9	14.4	...	...	6.0	18.5	4.8	2.4	5.4	6.7	19.4	14.3	31.2	49.1	65.3	23.6
	1955	21.4	10.6	1.4	2.7	6.4	22.1	3.7	1.6	4.9	8.7	20.6	16.2	31.8	40.0	54.5	21.4
	1956	25.3	7.6	2.2	4.1	5.2	21.2	6.7	1.8	6.1	9.1	21.6	16.7	28.1	31.2	55.6	29.2
	1957	26.0	13.7	4.1	4.6	3.1	23.6	7.8	2.2	6.4	8.6	21.7	15.4	29.4	31.8	78.1	25.2
	1958	24.0	9.2	4.2	3.7	2.5	18.2	6.6	2.2	5.0	9.0	21.4	11.2	29.2	20.4	59.5	17.2
	1959	26.8	12.1	3.8	4.9	3.6	22.6	6.8	2.0	5.6	9.7	22.5	17.8	29.9	26.7	62.0	16.0
	II	18.8	9.8	5.3	2.9	3.0	17.7	8.0	2.1	5.4	7.8	22.2	17.9	31.0	19.1	72.4	17.7
	III	47.1	12.9	3.0	6.3	3.7	33.9	6.5	2.5	6.3	12.2	21.8	20.7	31.3	29.7	67.0	12.1
	IV	27.7	15.5	4.3	7.3	3.9	24.6	7.0	1.8	6.5	10.4	26.2	18.6	35.0	39.4	58.2	20.9
	1960 I	30.6	13.2	3.8	5.0	3.0	21.8	6.4	2.6	9.2	8.9	25.0	19.7	26.8	36.5	53.3	22.4
	II	...	...	3.9	4.4	3.5	20.6	8.8	2.3	7.5	8.1	24.0	18.4	23.0	34.3	68.0	23.1

GENERAL NOTES: (1) For details and explanatory notes, see United Nations *Direction of International Trade* (Statistical Paper series T).

(2) As complete breakdowns are not given, the sum of total trade of any individual country with different regions does not add up to the total given under trade with "all countries".

(3) See general note to table 6.

(4) Trade between the Federation of Malaya and Singapore is excluded.

a. ECAFE countries comprise:

i) Sterling countries — Brunei, Burma, Ceylon, Federation of Malaya, Hong Kong, India, North Borneo, Pakistan, Sarawak and Singapore.

ii) Non-sterling countries — Afghanistan, Cambodia, China, Indonesia, Iran, Japan, Korea, Laos, Philippines, Thailand and Viet-Nam.

7. DIRECTION OF INTERNATIONAL TRADE *(Cont'd)*

Quarterly averages or quarters

Million dolla

Area of origin for imports and area of destination for exports	Year and Quarter	JAPAN		KOREA, Republic of		LAOS		PAKISTAN		PHILIPPINES		SINGAPORE		THAILAND[c]		VIET-NAM[f]	
		Exp.	Imp.	Exp.	Imp.[c]	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.[e]	Exp.	Imp.	Exp.	Imp.	Exp.	Imp
1. All countries	1953	318.7	602.4	9.9	66.9	...	...	109.7	87.5	101.0	114.2	171.3	191.4	87.1	75.8	...	..
	1954	407.3	599.8	6.1	55.4	...	...	89.7	81.2	101.3	120.7	177.8	190.3	73.0	67.8	...	..
	1955	502.7	617.9	4.5	85.0	0.4	4.7	100.2	72.3	100.2	136.9	227.2	234.0	90.8	75.0	17.2	65.
	1956	625.2	807.4	6.2	96.6	0.3	8.8	85.0	104.1	112.8	126.6	223.2	253.1	83.6	92.4	11.3	54.
	1957	714.6	1,071.0	5.6	110.0	0.3	10.4	84.2	110.0	107.9	153.6	226.5	267.7	91.2	103.2	19.9	72.
	1958	719.2	758.4	4.1	94.6	0.4	6.8	74.4	99.1	123.3	140.5	202.6	253.2	77.2	96.1	13.8	58.
	1959	864.1	899.9	4.8	70.7	3.6	6.8	80.0	88.3	143.7	128.3	222.2	253.7	89.8	104.8	18.8	56.
	II	811.7	946.5	7.3	62.1	1.5	4.0	66.8	65.2	152.0	129.3	222.6	261.9	80.1	104.2	14.6	55.
	III	883.3	902.2	4.8	77.6	5.1	8.7	71.3	91.6	167.3	132.2	230.5	254.9	91.3	106.0	21.9	55.
	IV	1,032.5	960.8	3.9	72.0	7.8	11.1	108.3	110.0	138.1	146.4	244.7	263.0	100.2	116.6	26.9	67.
	1960 I	885.7	1,129.9	4.1	60.8	9.5	14.0	99.2	137.2	121.7	129.6	227.7	270.2	106.7	115.9	16.9	59.
	II	958.5	1,112.1	8.4	84.9	8.0	12.5	108.1	178.0	170.1	144.4	224.5	263.3	94.1	108.5	22.1	116.
2. ECAFE countries[a] (including Japan)	1953	142.7	164.0	2.2	30.8	...	...	37.0	13.6	13.4	13.9	63.9	118.1	63.5	35.0	...	..
	1954	173.6	144.8	2.5	27.2	...	...	26.5	17.2	14.5	20.3	59.5	115.6	50.0	32.8	...	..
	1955	179.9	182.7	2.8	9.1	0.3	2.9	37.2	17.1	16.9	25.8	70.8	152.0	53.8	36.2	5.6	17.
	1956	222.7	195.2	2.6	4.9	0.3	5.5	30.0	12.6	22.9	26.3	82.1	160.5	51.2	46.8	1.4	19.
	1957	247.9	210.2	3.8	5.5	0.2	6.1	27.4	23.9	22.7	35.9	92.8	168.7	58.5	48.1	3.9	24.
	1958	218.8	162.2	2.8	5.4	0.2	3.7	17.2	24.8	27.2	39.0	89.9	164.5	46.4	48.7	4.3	19.
	1959	240.8	192.2	3.5	14.0	3.6	1.9	20.5	22.0	37.0	38.6	80.2	175.4	49.6	51.1	3.8	19.
	II	225.8	208.8	5.4	17.4	1.6	1.6	18.2	12.4	41.7	40.5	76.9	181.6	46.5	47.2	5.2	19.
	III	229.6	196.3	3.7	11.6	5.0	2.1	21.0	24.1	45.2	37.0	81.2	171.6	46.0	47.6	2.4	20.
	IV	287.5	202.4	2.1	14.5	7.7	1.9	25.7	34.2	33.5	45.1	96.0	190.7	60.3	59.4	4.2	23.
	1960 I	265.9	246.9	2.4	13.6	9.5	2.8	33.5	30.1	34.3	33.9	81.7	189.4	63.6	52.7	5.5	18.
	II	269.9	227.5	5.9	27.9	8.0	2.9	39.6	36.0	43.9	38.0	82.8	173.9	58.0	48.8	7.7	18.
3. Japan	1953	.	.	1.5	26.7	...	...	21.4	4.5	12.0	5.1	7.9	8.6	21.2	13.1	...	..
	1954	.	.	1.8	17.2	...	...	7.8	8.7	12.6	7.3	8.2	9.8	17.3	16.3	...	..
	1955	.	.	1.8	4.2	—	0.4	11.6	10.2	15.2	10.8	16.2	15.9	15.8	15.8	0.4	8.
	1956	.	.	2.0	2.3	—	1.4	10.6	5.2	20.1	12.8	17.6	17.2	7.2	15.2	0.1	14.
	1957	.	.	2.7	2.9	—	2.3	11.0	4.0	19.5	18.4	19.9	18.4	7.2	21.1	1.0	15.
	1958	.	.	2.4	3.6	—	1.1	7.5	5.6	24.2	20.3	15.4	22.0	5.8	22.5	0.2	11.
	1959	.	.	3.2	8.0	—	0.6	6.6	5.1	32.9	22.6	16.0	19.9	10.5	26.4	0.5	11.
	II	.	.	5.3	10.7	—	0.5	7.2	2.7	36.5	24.5	17.1	19.4	11.9	26.0	0.9	11.
	III	.	.	3.1	5.1	—	0.9	6.8	6.0	41.7	22.3	15.3	19.2	7.1	23.2	0.3	13.
	IV	.	.	1.7	8.4	—	0.4	5.5	7.1	29.4	27.7	16.6	20.7	17.0	30.3	0.6	14.
	1960 I	.	.	1.3	7.2	—	0.3	8.9	13.0	31.5	19.2	14.5	25.1	16.3	29.5	0.3	9.
	II	.	.	5.2	21.4	—	0.3	7.6	15.5	37.8	22.6	12.4	22.0	16.6	25.0	0.7	10.
4. Western Europe (including UK)	1953	28.9	50.8	0.1	4.2	...	...	53.6	25.4	13.8	5.8	44.4	44.3	3.3	24.7	...	..
	1954	36.9	49.2	0.1	4.4	...	...	43.4	39.2	20.2	10.7	52.2	45.1	6.4	22.7	...	..
	1955	49.0	43.8	0.3	5.9	—	1.4	42.2	31.4	18.1	12.4	78.3	50.8	7.5	24.4	5.9	35.
	1956	63.7	58.0	0.9	3.7	—	2.3	39.0	29.6	23.5	16.3	73.5	55.9	8.1	28.4	7.7	17.
	1957	79.6	97.5	0.8	2.0	0.1	2.8	37.8	42.8	22.8	23.2	62.1	60.4	8.4	34.1	10.5	30.
	1958	82.3	65.9	0.6	3.6	0.1	2.1	39.6	38.8	23.3	18.6	54.1	52.7	11.3	27.9	7.9	23.
	1959	89.5	87.6	0.6	16.6	—	4.4	34.5	35.9	24.1	20.7	60.7	46.6	8.4	32.6	10.7	19.
	II	71.6	99.9	0.8	15.6	—	2.2	26.0	26.2	16.2	21.0	64.2	52.2	7.9	32.7	7.1	18.
	III	99.6	87.5	0.4	12.9	—	5.9	28.5	33.6	27.8	22.2	60.5	48.2	7.0	38.7	11.6	18.
	IV	107.5	86.3	0.9	25.6	—	8.6	50.8	47.6	36.1	22.9	69.0	43.1	10.3	34.7	17.8	22.
	1960 I	122.4	97.1	0.9	18.0	—	10.7	38.3	56.6	22.8	20.7	65.9	49.9	13.8	39.8	8.8	23.
	II	99.0	96.4	1.4	21.2	—	9.2	33.7	76.5	27.8	22.0	62.0	54.9	13.2	34.8	8.5	23.
5. United Kingdom	1953	8.3	12.2	0.1	0.6	...	...	21.1	14.4	1.3	1.1	21.1	31.0	0.6	10.0	...	..
	1954	12.8	9.3	0.1	1.5	...	...	17.4	23.2	1.2	2.3	22.1	27.8	1.8	8.1	...	..
	1955	15.2	9.5	—	1.1	—	0.1	15.2	17.6	1.4	3.2	35.8	32.3	1.8	8.6	0.4	1.
	1956	15.8	16.6	0.2	0.6	—	0.3	13.6	14.4	1.7	3.8	33.0	34.7	2.6	10.6	0.1	0.
	1957	18.4	24.6	0.2	0.3	—	0.6	13.4	21.0	1.7	5.8	25.1	36.6	2.8	11.6	—	1.
	1958	26.3	14.8	0.2	0.4	—	0.3	14.7	17.6	1.6	4.8	20.9	32.7	4.1	10.3	0.3	1.
	1959	25.8	25.9	0.2	2.0	—	2.9	14.8	15.6	2.3	5.4	22.4	26.5	2.7	10.8	0.6	1.
	II	15.5	35.0	0.2	1.2	—	1.2	10.0	11.6	2.5	5.4	22.1	28.9	2.5	12.4	0.2	1.
	III	28.0	24.4	0.3	1.9	—	4.0	11.5	15.6	2.5	5.6	23.6	27.4	2.1	10.0	0.3	1.
	IV	33.3	22.8	0.3	3.2	—	6.1	23.7	21.9	2.0	6.3	24.0	25.2	3.0	12.2	1.3	1.
	1960 I	32.1	24.0	0.3	3.1	—	8.0	15.4	23.7	2.6	5.3	23.2	30.1	3.5	10.0	1.4	1.
	II	22.0	19.5	0.5	1.8	—	7.5	17.4	29.0	3.9	6.4	25.8	30.3	2.3	12.8	0.4	1.
6. Eastern Europe	1953	1.0	1.4	—	—	...	...	3.2	0.4	—	—	2.8	1.4	—	0.1	...	..
	1954	1.3	1.1	—	—	...	...	2.0	0.7	—	0.1	2.1	0.9	—	—	...	..
	1955	3.8	0.8	—	—	—	—	1.7	0.2	—	—	2.7	0.8	0.1	—	—	—
	1956	0.6	0.8	—	—	—	—	1.3	0.4	—	—	6.3	1.0	—	0.5	—	0.
	1957	3.9	4.6	—	—	—	—	2.8	0.9	—	—	8.3	1.1	—	0.8	—	—
	1958	5.1	5.9	—	—	—	—	3.7	2.1	—	—	10.8	0.8	—	0.8	—	—
	1959	9.6	11.0	—	—	—	—	3.0	1.2	—	—	19.6	0.8	0.1	0.8	—	—
	II	5.4	8.2	—	—	—	—	3.4	0.8	—	—	21.2	0.7	—	0.8	—	1.
	III	12.2	14.4	—	—	—	—	1.8	1.5	—	—	18.9	1.0	0.1	1.1	—	—
	IV	18.9	14.1	—	—	—	—	3.3	1.0	—	—	15.3	0.8	0.2	0.7	—	—
	1960 I	8.5	15.6	—	—	—	—	4.1	2.9	—	0.2	8.8	1.3	0.9	1.3	—	—
	II	12.6	23.4	—	—	—	—	8.0	4.9	—	—	18.8	1.5	0.1	0.9	—	—

7. DIRECTION OF INTERNATIONAL TRADE *(Cont'd)*

Quarterly averages or quarters

Million dollars

ea of origin or imports nd area destination or exports	Year and Quarter	JAPAN		KOREA, Republic of		LAOS		PAKISTAN		PHILIPPINES		SINGAPORE		THAILAND[c]		VIET-NAM[f]	
		Exp.	Imp.	Exp.	Imp.[c]	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.[e]	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
7.	1953	65.2	242.4	7.6	27.8	...	...	7.4	4.2	69.6	90.6	24.1	10.3	17.7	14.6	...	...
rth	1954	83.2	266.0	3.5	23.0	...	...	6.1	6.2	62.4	85.4	25.3	11.9	14.0	11.5	...	...
erica	1955	134.8	255.5	1.8	62.1	—	0.3	8.4	8.6	60.3	93.6	37.9	11.8	26.6	13.4	4.0	8.0
	1956	164.5	358.6	2.7	82.1	—	0.9	8.5	6.8	61.0	79.2	28.0	15.1	21.0	14.9	2.1	15.6
	1957	183.5	495.6	1.0	98.6	—	1.5	9.8	34.4	56.7	88.5	27.0	12.6	18.3	17.9	2.8	16.6
	1958	214.6	339.4	0.7	83.0	—	0.9	8.3	31.0	68.2	76.2	19.4	10.6	14.4	17.5	1.3	14.4
	1959	315.5	372.4	0.6	37.8	—	0.5	9.8	25.8	79.2	62.7	30.2	11.2	22.2	18.9	1.6	15.2
	II	310.3	393.6	0.4	26.6	—	0.3	7.7	24.0	92.3	63.6	26.6	10.6	17.2	21.7	1.6	15.2
	III	344.3	378.4	0.7	51.5	—	0.4	7.7	28.9	90.0	64.4	37.2	11.0	30.3	18.3	1.0	14.5
	IV	362.0	374.3	0.7	28.3	—	0.7	12.9	21.3	63.0	69.1	31.1	10.4	17.2	20.3	1.7	20.4
	1960 I	[illegible]	485.6	0.8	27.3	—	0.4	10.6	40.1	60.7	68.9	32.7	10.9	19.5	19.9	0.4	17.9
	II	[illegible]	462.5	1.1	31.8	—	0.4	9.3	48.0	94.7	75.6	25.4	15.2	12.3	20.4	1.4	15.7
8.	1953	56.5	189.4	7.6	24.0[d]	...	...	7.2	4.1	69.0	87.8	20.2	9.5	17.5	14.2	...	...
ited States	1954	70.7	212.3	3.5	21.9[d]	...	...	6.0	5.2	61.6	81.6	21.2	10.9	13.6	11.0	...	...
America	1955	114.3	193.5	1.8	60.9[d]	—	0.3	7.7	8.0	60.0	89.0	32.4	10.7	26.2	12.8	4.0	7.9
	1956	137.9	266.8	2.7	81.2[d]	—	0.9	7.8	6.5	60.6	75.1	23.2	13.5	20.8	14.2	2.1	15.2
	1957	151.6	406.6	1.0	98.5[d]	—	1.5	9.6	30.1	56.2	84.3	22.4	11.4	18.1	16.9	2.8	16.4
	1958	173.1	264.4	0.7	82.5[d]	—	0.9	7.9	27.0	67.6	73.2	15.8	9.5	14.0	16.8	1.3	13.7
	1959	262.8	279.0	0.6	35.5	—	0.4	8.3	20.9	78.8	58.9	23.8	10.2	22.2	17.6	1.6	14.6
	II	254.4	292.8	0.4	24.5	0.1	0.3	7.0	22.7	92.3	60.9	19.8	9.6	17.1	20.8	1.6	14.6
	III	284.4	280.6	0.7	48.7	—	0.4	5.6	24.4	88.9	60.7	29.2	10.1	30.3	17.2	1.0	13.8
	IV	310.3	274.0	0.7	25.7	—	0.6	10.7	16.0	62.5	64.4	25.1	9.7	17.2	17.4	1.7	19.4
	1960 I	264.3	396.7	0.8	24.8	—	0.4	9.9	35.1	60.5	65.7	25.1	9.8	19.5	19.1	0.4	17.6
	II	281.8	386.2	1.1	30.4	—	0.4	8.6	46.4	94.3	72.1	21.3	13.7	12.1	19.9	1.4	14.5
9.	1953	26.1	66.2	—	0.5	...	...	0.5	—	2.8	0.2	3.7	0.1	—	—	...	...
tin	1954	50.3	77.2	—	0.3	...	...	0.9	—	3.0	0.7	4.9	0.2	0.1	—	...	...
nerican	1955	44.8	60.7	—	0.3	—	—	1.6	—	3.6	0.7	8.1	0.2	0.2	—	—	—
publics	1956	41.0	87.3	—	0.2	—	—	0.9	—	3.8	1.2	4.9	0.4	0.2	—	—	0.4
	1957	37.3	77.1	—	—	—	—	1.2	2.8	3.6	0.9	9.2	0.4	0.2	0.1	0.1	0.2
	1958	48.4	64.7	—	—	—	—	0.8	0.4	2.6	1.2	5.6	0.3	—	0.1	—	0.6
	1959	56.0	81.3	—	0.1	—	—	1.9	—	2.5	1.2	7.3	0.2	0.1	—	—	0.5
	II	50.3	83.0	—	0.1	—	—	1.2	—	0.7	1.5	7.5	0.2	—	—	—	0.6
	III	66.1	84.9	—	0.2	—	—	2.8	—	3.4	0.4	8.6	0.3	0.2	—	—	0.5
	IV	71.8	97.7	—	—	—	—	2.3	—	4.2	2.0	7.7	0.1	0.1	—	—	0.9
	1960 I	58.3	59.0	—	—	—	—	1.5	—	2.6	1.2	9.6	0.2	0.4	—	—	0.2
	II	72.5	66.1	—	—	—	—	1.0	—	2.8	1.7	12.5	0.3	—	0.5	—	1.2
10.	1953	3.6	50.2	—	3.4	...	...	1.4	0.5	0.2	0.3	15.5	7.4	—	1.0	...	...
eania	1954	8.8	34.0	—	0.7	...	...	1.6	0.5	0.2	0.8	15.3	7.2	—	0.6	...	...
	1955	17.2	50.8	—	0.2	—	—	1.4	0.6	0.3	1.3	17.4	7.8	0.1	0.8	—	0.2
	1956	10.8	71.6	—	0.1	—	—	0.6	0.6	0.3	1.4	19.8	9.1	0.1	1.0	—	0.1
	1957	14.6	109.4	—	—	—	—	0.5	4.6	0.2	2.7	16.1	10.2	0.2	1.2	—	0.1
	1958	19.9	65.0	—	0.2	—	—	0.6	0.9	0.2	2.8	11.5	9.0	0.2	1.0	—	0.2
	1959	25.5	84.9	—	2.0	—	0.1	1.8	0.9	0.2	2.8	12.8	9.5	0.4	1.1	—	0.1
	II	22.8	86.0	—	2.3	—	—	1.1	0.1	0.1	2.3	13.2	8.7	0.5	1.0	—	0.1
	III	29.3	82.9	—	0.9	—	—	2.5	0.9	0.2	3.3	14.9	10.9	0.5	1.2	—	0.1
	IV	32.4	99.3	—	4.1	—	0.1	2.2	1.4	0.4	3.6	13.5	8.8	0.4	1.2	—	0.3
	1960 I	22.2	93.6	—	2.0	—	—	1.6	2.4	0.4	1.9	15.2	9.5	0.6	1.0	—	—
	II	37.6	93.6	—	2.0	—	—	1.5	3.6	0.3	2.7	16.2	10.2	0.2	1.5	—	—
11.	1953	79.0	150.6	0.8	7.4	...	...	37.0	23.4	2.3	6.0	67.3	71.8	39.9	30.3	...	...
erling area	1954	122.8	108.4	0.7	10.8	...	...	33.6	32.6	2.4	10.2	70.1	69.6	32.1	22.5	...	...
	1955	160.2	147.2	0.5	5.0	—	0.4	38.5	25.9	2.6	12.1	85.3	79.1	35.7	26.7	2.4	3.5
	1956	171.2	204.4	0.7	2.2	0.1	1.7	32.4	20.7	4.0	12.4	84.8	87.3	38.8	40.0	0.6	2.3
	1957	201.7	280.4	1.2	1.2	0.1	2.0	30.3	37.6	3.8	17.2	78.1	82.3	43.9	35.9	1.4	3.3
	1958	199.9	197.8	0.5	1.6	0.1	1.3	24.9	29.4	2.6	14.6	62.2	84.2	38.7	33.0	2.1	3.8
	1959	215.0	276.4	0.5	6.4	3.5	3.3	36.1	25.5	4.2	13.7	66.4	76.0	42.6	32.2	3.8	3.6
	II	190.7	286.2	0.2	5.8	1.4	1.6	28.3	16.8	4.6	12.6	66.8	74.5	38.0	31.9	4.5	3.6
	III	217.3	279.2	0.9	5.3	4.9	4.3	32.5	25.3	4.1	14.0	70.3	80.2	41.7	29.3	2.9	4.1
	IV	272.1	312.7	0.7	10.1	7.5	6.5	54.6	39.2	3.8	17.8	70.6	78.3	46.9	37.5	4.2	4.0
	1960 I	213.0	279.5	1.3	7.0	9.3	8.7	44.1	36.0	4.1	15.3	72.1	80.6	49.7	30.4	3.9	3.8
	II	260.1	282.4	1.2	5.9	7.9	8.3	49.9	44.8	8.0	21.0	77.1	86.8	43.8	33.9	3.5	2.5
12.	1953	47.8	82.1	0.7	3.3	...	...	13.2	6.6	0.6	4.5	26.0	29.0	37.8	19.1	...	...
AFE	1954	72.0	60.2	0.6	8.5	...	...	11.6	6.3	0.7	6.7	27.2	21.2	28.0	13.7	...	...
erling	1955	87.3	74.6	1.0	3.8	—	0.2	16.9	5.5	0.7	7.3	25.5	31.7	31.6	17.0	1.9	2.3
untries[a]	1956	99.2	92.2	0.5	1.6	—	1.3	13.8	4.6	1.6	7.1	29.1	34.6	34.5	26.6	0.6	1.2
	1957	111.0	105.2	1.0	0.9	0.1	1.4	12.0	11.1	1.4	8.2	30.9	31.4	38.0	21.9	1.3	1.5
	1958	94.9	78.0	0.3	0.8	0.1	0.9	5.4	10.4	0.6	5.6	23.8	31.9	31.5	21.2	1.8	1.9
	1959	101.5	101.0	0.3	2.2	3.5	0.4	11.2	7.6	1.4	4.8	24.6	32.3	34.8	19.8	3.0	2.0
	II	87.4	101.3	—	2.1	1.4	0.4	9.1	4.7	1.6	4.7	23.5	30.6	31.8	18.0	4.2	2.1
	III	93.9	119.3	0.6	2.5	4.9	0.3	11.6	7.4	0.7	4.2	25.7	32.4	36.0	17.5	2.0	2.0
	IV	136.9	108.3	0.4	2.8	7.5	0.3	16.6	12.4	1.3	6.4	26.4	36.5	34.5	23.5	2.6	1.8
	1960 I	105.4	114.2	1.0	1.8	9.3	0.6	19.5	6.9	0.7	6.4	26.9	34.6	42.9	19.1	2.0	2.0
	II	132.8	120.8	0.7	2.1	7.9	0.7	20.6	8.7	2.5	7.9	30.1	41.7	38.9	18.8	3.0	0.9

b. Figures for trade with the Netherlands are as follows:—

		Exp.	*Imp.*
1953		48.4	22.4
1954		41.3	16.4
1955		37.7	17.7
1956		42.9	22.8
1957		40.7	19.6
1958		7.8	8.3
1959		2.3	4.3
1959	I	2.9	4.2
	II	2.9	2.8
	III	1.9	4.8
	IV	1.5	5.4
1960	I	0.6	3.8
	II	0.4	4.9

c. Figures prior to 1955 for Republic of Korea and 1956 for Thailand are derived from trade returns of partner countries. Totals for geographical and currency areas may not be complete.

d. Including some imports of aid goods from countries other than the United States.

e. Imports valued f.o.b.

f. See footnote i to table 6.

8. VALUE OF IMPORTS BY PRINCIPAL COMMODITY GROUPS

Monthly averages or calendar months

Millions

	1954	1955	1956	1957	1958	1959	1959 II	1959 III	1959 IV	1960 I	1960 II	1960 July	1960 Aug
BRUNEI (*Malayan dollar*)													
Food	1.24	1.40	1.35	1.16	1.10	1.06	1.06	1.07	1.13	...	...	...	...
Mineral fuels, lubricants and related materials	0.51	0.24	0.21	0.29	0.25	0.21	0.24	0.16	0.18	...	...	...	...
Chemicals	0.32	0.32	0.34	0.42	0.41	0.29	0.27	0.34	0.30	...	...	...	...
Textiles	0.18	0.15	0.21	0.17	0.15	0.10	0.09	0.10	0.10	...	...	...	...
Machinery	1.53	1.30	1.46	1.55	1.11	0.68	0.51	0.71	0.86	...	...	...	...
Transport equipment	0.79	0.51	0.70	0.58	0.55	0.34	0.37	0.38	0.26	...	...	...	...
Other manufactured goods	3.45	3.29	3.93	3.25	2.40	...	...	...	...	...	...	...	...
BURMA (*kyat*)													
Food	10.3	8.0	6.8	10.9	10.0	10.0	...	...	...	10.8	...	...	...
Chemicals	4.6	5.4	7.1	10.3	5.4	6.5	...	...	...	9.8	...	...	...
Textiles	24.1	16.6	22.4	33.0	15.8	22.9	20.0	26.0	32.0	38.6	...	...	...
Base metals and manufactures	9.4	8.4	6.9	14.1	9.8	9.2	7.0	9.0	10.7	9.1	...	...	...
Machinery	7.8	7.3	10.1	12.0	15.7	12.7	21.3	12.3	18.7	9.4	...	...	...
Transport equipment	4.6	5.7	6.3	11.2	6.7	6.5	...	...	...	7.0	...	...	...
Other manufactured goods	11.2	9.3	9.7	13.9	9.2	9.7	...	...	...	10.8	...	...	...
CAMBODIA (*riel*)													
Food	10.0	15.1	16.5	20.5	22.5	24.8	23.8	21.7	20.6	25.3	*23.2*	...	...
Beverages and tobacco	22.8	9.0	5.2	6.7	8.0	6.8	8.7	4.5	8.8	8.1	*8.1*	...	...
Mineral fuels, lubricants and related materials	13.6	11.8	9.9	5.3	3.5	25.5	16.7	48.7	18.2	17.5	...	...	...
Textiles	26.9	27.8	33.4	35.0	40.1	25.0	12.9	27.3	35.2	91.5	*50.4*	...	...
Base metals and manufactures	10.1	13.1	13.6	20.0	23.4	26.0	20.2	29.4	26.5	62.8	*24.2*	...	...
Machinery	5.6	11.3	16.1	11.9	29.0	20.6	13.7	19.8	30.5	45.1	*35.6*	...	...
Transport equipment	8.5	8.7	9.7	9.1	22.6	13.3	10.2	10.3	20.5	21.4	*24.5*	...	...
CEYLON (*rupee*)[a]		[a]											
Food	53.8	50.3	56.7	59.4	57.8	65.7	49.9	91.2	71.0	59.6	50.7	56.4	106.1
Cereals and cereal preparations	33.0	26.1	28.3	29.0	26.0	33.0	20.7	59.4	33.4	24.0	19.0	27.8	53.1
Mineral fuels, lubricants and related materials	9.9	12.0	10.6	18.7	11.8	12.6	13.3	14.2	11.4	16.7	11.2	20.2	13.0
Chemicals	6.1	7.6	8.2	10.1	8.7	11.2	9.8	12.6	12.3	10.9	11.5	11.2	10.7
Textiles	12.2	11.3	13.4	13.6	15.1	14.2	11.4	12.6[r]	17.3	14.2	14.8	14.1	15.0
Machinery	5.7	7.1	8.7	9.5	10.6	12.8	12.6	12.9	13.0	10.8	11.0	12.9	10.9
Transport equipment	4.8	5.9	6.9	7.3	8.9	14.7	16.0	13.8	16.2	15.7	16.6	13.6	11.2
Other manufactured goods	20.0	21.8	25.1	25.3	24.1	30.2	27.4	30.2	35.0	32.2	34.6	36.1	33.3
CHINA (Taiwan, *new Taiwan dollar*)													
Food	43.7	26.6	42.2	33.6	46.7	49.6	58.5	46.8	71.9	*48.4*	144.1	56.7	27.2
Crude materials, inedible, except fuels	66.9	63.5	92.1	107.4	93.0	138.5	173.3	164.7	116.0	136.5	182.7	185.3	272.3
Oil-seeds, oil nuts and oil kernels	17.5	19.0	23.3	25.0	20.4	28.8	24.2	38.8	21.8	24.3	30.2	42.4	90.9
Textile fibres, raw	31.8	31.8	37.1	43.7	41.8	55.6	91.8	61.6	42.7	64.5	90.5	81.3	108.8
Mineral fuels, lubricants and related materials	9.3	21.3	26.2	46.3	36.6	49.0	31.8	53.9	40.2	71.7	84.0	4.5	14.4
Chemicals	47.6	44.8	75.7	62.1	103.2	146.1	140.2	200.5	121.6	129.3	109.1	220.1	172.6
Base metals and manufactures	29.0	25.9	45.7	48.0	47.9	77.9	105.4	92.9	73.2	67.6	89.6	117.0	155.0
Machinery	33.5	43.8	60.6	74.9	76.2	134.0	132.0	164.7	123.5	100.6	278.9	333.5	315.0
Transport equipment	8.6	8.0	14.2	16.6	23.3	39.1	38.2	46.7	56.0	30.5	92.2	44.9	107.0
Other manufactured goods	26.4	21.4	30.6	37.3	28.9	42.2	53.8	39.7	43.4	64.7	53.1	57.2	65.0
FEDERATION OF MALAYA[b] (*Malayan dollar*)													
Food	35.1	39.8	43.7	44.0	44.0	42.5	39.5	45.9	45.7	44.7	45.1	47.7	53.8
Cereals and cereal preparations	12.0	14.5	15.6	15.5	15.8	15.6	12.8	17.2	17.7	14.1	15.9	...	...
Crude materials, inedible, except fuels	11.5	14.1	16.5	17.3	15.2	17.6	16.0	17.8	23.7	28.0	26.9	33.8	31.0
Metal ores and scrap	3.9	5.3	5.9	7.3	4.4	5.1	4.9	5.3	6.3	6.8	10.6	...	...
Mineral fuels, lubricants and related materials	9.6	10.5	11.3	12.5	11.2	10.7	12.0	10.8	10.8	10.7	13.4	14.1	15.2
Textiles	7.4	8.9	8.3	8.4	7.3	8.3	7.1	8.6	9.5	11.0	8.7	...	...
Machinery	8.2	8.3	10.6	11.7	10.4	11.7	10.6	11.4	15.4	14.0	14.7	27.5	30.8
Transport equipment	4.1	6.2	8.6	8.6	8.0	8.4	7.6	9.8	10.0	10.3	12.7		
Other manufactured goods	19.6	23.7	26.8	27.3	22.5	24.5	23.8	24.5	27.4	28.3	28.8	...	...
INDIA (*rupee*)[a]				[a]									
Food	80.4	94.6	84.7	162.5	1,488	128.9	*166.4*	*137.2*	*109.2*	*75.0*	*77.1*	...	...
Crude materials, inedible, except fuels	72.7	94.2	99.6	93.5	66.7	78.6	*88.3*	*84.9*	*74.5*	*101.4*	*147.7*	*134.4*	*157.6*
Cotton raw and waste	47.9	44.6	44.7	40.5	25.6	29.0	*43.7*	*30.0*	*21.8*	*42.1*	*85.6*	*75.4*	*92.2*
Petroleum and products	72.5	78.3	90.4	89.6	63.2	65.0	*52.6*	*62.4*	*88.9*	*78.4*	*55.8*	*67.2*	*61.7*
Chemicals	41.9	44.0	49.0	64.0	54.4	71.0	*79.1*	[illegible]	*66.9*	*72.6*	*71.3*	*72.8*	*65.0*
Base metals and manufactures	45.3	69.0	131.2	191.2	125.6	120.2	*113.0*	*151.0*	*124.7*	*114.5*	*156.8*	*160.8*	*169.5*
Machinery	75.7	76.9	127.5	194.1	157.4	163.5	*165.8*	*158.0*	*178.6*	*161.4*	*207.7*	*147.3*	*202.2*
Transport equipment	31.7	56.2	64.4	63.2	49.6	58.7	*88.7*	*49.5*	*46.1*	*41.6*	*59.2*	*39.1*	*56.0*
Other manufactured goods	55.8	68.2	90.8	66.4	43.8	44.3	*43.8*	*42.5*	*43.1*	*43.6*	*45.9*	*49.7*	*49.9*
INDONESIA (*rupiah*)													
Live animals, food products, beverages and tobacco	96.0	63.2	177.2[r]	133.0[r]	114.8	99.1[r]	91.4[r]	80.6	142.4	631.1	448.4	331.5	547.5
Chemicals and allied products	36.9[r]	53.4[r]	55.9	59.9	43.2	50.7[r]	51.9	56.4	48.1	116.7	115.8	163.1	213.1
Textiles, apparel and footware	173.9	175.4	202.2	165.8[r]	101.6	84.5	66.6	66.1	125.8	437.6	620.7	612.0	660.0
Base metals and manufactures	63.2	72.2[r]	80.4[r]	111.4[r]	53.4	60.4[r]	54.1	70.0	67.3	138.0	203.2	150.3	224.3
Machinery and transport equipment	116.2[r]	10.24	145.7[r]	134.7[r]	88.5	82.2[r]	82.2	71.7	98.8	233.6	442.1	316.0	454.2

8. VALUE OF IMPORTS BY PRINCIPAL COMMODITY GROUPS *(Cont'd)*

Monthly averages or calendar months

Millions

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
IRAN* *(rial)*[c]			[d]										
Food, beverages and tobacco	127.6	146.3	326.2	371.4	...	...	...	...	...	...	...	...	...
Sugar	94.7	78.8	189.1	180.1	180.1	*151.2*	191.7	162.0	160.0	...	...	...	...
Tea	25.4	58.6	78.6	137.8	124.2	*93.3*	98.0	79.3	90.3	...	...	...	...
Chemicals	71.8[r]	73.6[r]	61.8[r]	88.7	128.5	*198.2*	232.3	229.7	162.7	...	...	...	...
Textiles	128.8	117.3	270.4	312.3	...	...	...	...	...	...	...	...	...
Base metals and manufactures	170.2[r]	230.5[r]	185.0	288.6	390.2	*483.6*	451.3	513.0	520.0	...	...	...	...
Machinery	185.4[r]	237.2[r]	230.3[r]	298.0	565.2	*861.7*	821.0	1,094.0	710.0	...	...	...	...
Transport equipment	101.2[r]	129.1[r]	151.4[r]	169.2	279.8	*381.7*	536.3	372.0	231.7	...	...	...	...
Other manufactured goods	...	...	...	...	...	...	...	...	...	...	...	...	...
JAPAN *(thousand million yen)*													
Food	19.30	18.34	16.47	17.06	15.66	14.50	16.58	14.11	13.18	13.93	15.08	15.93	16.42
Cereals and cereal preparations	14.66	13.20	11.08	9.36	9.43	8.69	10.93	8.52	7.45	7.32	8.82	9.48	9.53
Sugar and sugar preparations	3.39	3.64	4.02	5.08	3.85	3.40	3.09	3.40	2.89	4.03	3.17	3.70	3.27
Crude materials, inedible, except fuels	33.78	36.77	51.31	60.29	38.98	52.04	54.88	54.11	58.18	69.90	66.79	65.35	64.38
Oil-seeds, oil nuts & oil kernels	2.91	4.41	4.01	4.23	4.04	4.93	4.42	5.14	4.70	7.57	4.52	4.46	5.52
Crude rubber	1.30	2.24	2.66	3.05	2.59	4.25	4.00	4.86	4.98	6.57	5.37	5.92	4.98
Textile fibres, raw	18.54	17.57	23.16	23.86	18.23	19.56	21.87	16.86	21.14	26.27	25.40	22.01	19.64
Metal ores and scrap	5.13	5.57	13.70	20.78	7.73	14.89	16.33	17.19	17.24	19.10	19.92	20.99	22.08
Mineral fuels, lubricants and related materials	8.02	8.67	12.38	20.39	15.43	16.69	16.89	15.89	19.33	21.25	21.01	23.40	20.68
Chemicals	1.92	2.41	4.90	5.50	4.99	6.69	6.70	6.65	7.47	8.03	7.96	7.79	7.62
Machinery	3.77	3.29	3.93	7.26	9.11	8.96	10.89	7.47	6.89	9.63	8.65	8.71	9.40
Transport equipment	1.55	0.68	0.92	1.41	1.15	1.64	1.27	2.08	1.62	1.71	1.59	4.36	3.99
Other manufactured goods	2.54	2.41	5.68	15.26	4.42	5.93	5.15	6.79	7.18	9.05	10.52	8.48	8.59
KOREA, Republic of *(hwan)*[d]													
Food	276	555	452	922	707	1,266	471	1,450	1,401	1,597	2,316	1,970	3,215
Cereals and cereal preparations	122	78	65	558	198	855	598	784	799	984	1,457	1,063	1,982
Beverages and tobacco	126	188	220	224	174	1	3	—	—	1	3	3	—
Crude materials, inedible, except fuels	106	115	120	206	440	3,665	3,650	3,779	4,295	4,185	5,458	4,254	5,383
Chemicals	351	693	370	325	492	4,281	4,454	6,562	3,224	4,075	7,898	4,054	6,428
Textiles	604	1,273	663	345	392	1,082	1,116	855	1,363	1,319	1,238	1,419	1,856
Machinery	203	276	254	262	309	1,460	1,186	1,367	2,149	1,388	2,200	1,582	1,628
Transport equipment	113	52	79	48	42	308	117	73	40	42	32	26	48
Other manufactured goods	461	862	711	711	889	1,879	2,065	1,929	1,836	2,209	3,229	2,186	3,273
LAOS *(kip)*													
Food	...	15.2	18.0	17.0	16.5	19.8	17.1	17.6	24.9	25.5	32.3	...	...
Cereals and cereal preparations	...	7.4	10.5	6.2	3.4	3.3	1.8	1.5	6.3	5.9	6.3	...	...
Petroleum products	...	2.3	4.0	4.8	8.5	14.9	11.8	16.4	17.5	21.7	26.2	...	...
Chemicals	...	2.9	5.6	8.4	4.5	4.7	4.0	5.1	6.7	4.3	7.5	...	...
Textiles	...	9.1	23.0	26.0	11.6	11.7	10.9	12.8	12.3	9.2	8.8	...	...
Machinery	...	3.9	6.9	7.8	8.3	8.9	6.8	7.5	5.8	11.6	8.4	...	...
Transport equipment	...	3.5	12.0	18.7	10.1	6.9	4.7	12.8	5.2	7.8	5.0	...	...
Other manufactured goods	...	11.5	24.6	28.1	16.5	57.7	47.9	155.6	12.6	22.2	18.1	...	...
NORTH BORNEO *(Malayan dollar)*													
Food	1.46	1.89	2.54	2.33	2.53	2.43	2.34	2.59	2.57	2.53	2.80	...	...
Mineral fuels, lubricants and related materials	0.48	0.44	0.51	0.48	0.40	1.43	2.36	1.35	1.62	1.28	1.13	...	...
Chemicals	0.24	0.32	0.41	0.44	0.44	0.58	0.52	0.64	0.63	0.56	0.74	...	...
Textiles	0.46	0.53	0.69	0.55	0.47	0.50	0.54	0.49	0.59	0.67	0.68	...	...
Machinery	0.70	0.57	0.68	0.89	0.96	1.62	1.34	1.73	2.07	2.16	3.03	...	...
Transport equipment	0.25	0.24	0.51	0.45	0.51	0.56	0.59	0.50	0.60	0.72	1.07	...	...
Other manufactured goods	1.17	1.59	2.01	2.02	1.96	2.24	2.34	2.25	2.52	2.34	2.76	...	...
PAKISTAN *(rupee)*[e]													
Mineral oils	8.3	9.5	8.3	7.4	7.3	13.9	7.6	17.3	21.9	17.8	27.1	31.5	...
Chemicals	6.5	7.0	8.5	10.5	10.8	9.0	4.8	9.2	14.7	11.0	18.0	13.2	...
Iron and steel manufactures	5.6	8.3	15.5	18.8	19.7	14.2	11.8	8.8	17.3	23.6	22.5	25.5	...
Machinery	22.9	20.8	26.3	26.5	26.2	28.2	23.3	27.6	30.5	53.8	71.7	35.6	...
Transport equipment	3.7	4.1	7.7	9.5	10.7	9.4	6.8	9.8	12.0	11.5	17.6	14.7	...
PHILIPPINES *(peso)*[f]													
Food	13.2	17.1	14.7	18.0	19.6	11.4	10.2	12.2	13.5	14.0	16.2	...	...
Cereals and cereal preparations	4.3	6.2	4.4	6.3	8.7	3.9	2.2	3.6	5.2	4.0	4.6	...	...
Mineral fuels, lubricants and related materials	9.0	9.0	8.7	9.6	10.2	9.9	9.7	10.1	11.2	9.2	9.6	...	...
Chemicals	6.4	7.3	6.5	9.5	8.5[r]	9.8	10.0	9.2	12.0	9.9	9.3	...	...
Textiles	13.7	14.2	9.9	12.9[r]	9.0[r]	6.4[r]	7.0[r]	6.0[r]	7.7	5.2	5.4	...	...
Machinery	10.3	12.4	16.1	18.0	16.3[r]	17.9	18.7	18.1	19.9	18.7	19.7	...	...
Transport equipment	4.2	5.0	4.8	5.6	4.8	4.6	5.2	5.0	4.5	5.3	5.7	...	...
Other manufactured goods	19.7	21.7	20.1	24.7[r]	19.7[r]	19.2[r]	19.5[r] [i]	20.6[r]	21.8	17.5	22.9	...	...
SARAWAK *(Malayan dollar)*													
Food	3.85	4.32	4.36	4.57	4.04	4.65	3.94	5.35		4.69	4.99	...	...
Mineral fuels, lubricants and related materials	22.40	24.93	26.80	27.38	25.87	25.42	25.93	24.92		22.48	21.21	...	...
Chemicals	0.70	0.82	0.79	0.80	0.83	0.97	0.82	1.12		1.21	1.30	...	...
Textiles	0.57	0.61	0.54	0.47	0.42	0.61	0.59	0.63		0.84	0.95	...	...
Machinery	1.19	1.21	1.20	1.20	1.03	1.42	1.26	1.59		1.62	1.69	...	...
Transport equipment	0.36	0.37	0.45	0.38	0.36	0.37	0.30	0.45		0.54	0.48	...	...
Other manufactured goods	2.10	2.37	2.38	2.13	2.00	2.49	2.31	2.67		...	2.88[j]	..	...

8. VALUE OF IMPORTS BY PRINCIPAL COMMODITY GROUPS *(Cont'd)*

Monthly averages or calendar months

Millions

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
SINGAPORE *(Malayan dollar)*[g]													
Food	44.7	45.2	50.5	50.0	53.2	48.4	53.1	43.7	52.8	52.1	43.9	39.9	. . .
Cereals and cereal preparations	11.7	11.7	13.3	12.1	15.9	11.1	15.2	9.7	11.7	11.6	11.8	8.3	. . .
Crude materials, inedible, except fuels	38.7	59.5	54.9	57.0	50.8	72.9	74.8	74.3	86.3	85.4	76.3	71.7	. . .
Crude rubber	27.8	51.0	46.4	45.6	41.2	62.6	63.2	65.1	77.5	75.6	66.1	62.6	. . .
Mineral fuels, lubricants and related materials	43.7	50.0	59.1	65.2	55.8	50.0	45.9	54.4	45.2	43.3	49.2	51.6	. . .
Textiles	12.7	17.9	17.9	17.6	22.0	18.0	19.2	15.4	17.2	19.5	17.4	17.4	. . .
Machinery	7.9	10.3	12.2	13.5	12.3	11.4	11.8	12.6	11.4	13.1	13.3	14.6	. . .
Transport equipment	4.9	6.2	7.6	9.0	7.8	6.3	6.5	6.8	6.8	7.0	10.7	9.1	. . .
Other manufactured goods	25.7	30.2	34.1	37.7	33.3	31.0	33.5	31.3	29.5	33.8	35.0	36.1	. . .
THAILAND *(baht)*													
Food	53.3	51.5	55.2	57.8	65.1	61.0	54.4	73.9	62.0	51.9	57.9	63.2	*58.3*
Mineral fuels, lubricants and related materials	47.5	57.0	64.6	77.3	75.1	78.7	65.2	81.8	94.5	74.4	92.4	76.8	*113.4*
Chemicals	43.9	48.1	54.5	62.8	63.1	76.5	84.5	78.9	75.1	71.5	85.9	91.9	*80.5*
Textiles	105.0	113.4	120.3	113.7	102.0	115.8	*103.6*	*108.4*	*126.0*	*115.2*	*91.4*	*97.0*	*101.0*
Machinery	71.1	65.3	73.8	85.2	93.6	124.5	*115.2*	*129.6*	*156.6*	*155.7*	*111.9*	*102.8*	*104.5*
Transport equipment	44.6	48.7	53.1	73.7	61.4	58.8	*60.9*	*59.7*	*48.1*	*60.9*	*76.1*	*86.2*	*84.7*
Other manufactured goods	168.7	191.1	173.8	189.7	184.1	184.4	*195.9*	*154.3*	*175.8*	*213.3*	*185.3*	*184.9*	*180.0*
VIET-NAM *(piastre)*[h]													
Food	122.0	89.6	82.2	75.9	69.5	69.2	71.7	56.5	88.5	84.5	73.3	75.3	. . .
Petroleum and products	41.0	33.7	35.0	44.6	46.8	51.8	56.8	49.1	56.7	49.9	68.4	44.2	. . .
Textiles	190.1	111.2	123.5	128.7	108.5	73.9	71.6	64.7	84.6	74.5	55.2	63.3	. . .
Machinery	76.2	65.4	49.2	83.9	63.0	75.2	70.1	78.1	101.8	84.0	101.3	73.5	. . .
Transport equipment	49.3	52.3	32.6	58.3	53.4	42.0	35.9	45.5	54.6	39.9	39.2	28.2	. . .

GENERAL NOTE: See table 6.

a. 1954 figures for Ceylon, 1954 to 1956 figures for India, reclassified by ECAFE Secretariat, may not conform exactly to the new classification beginning from 1955 and 1957 respectively.

b. Including trade with Singapore.

c. Prior to 1956, transaction values converted from foreign currency to rials at the official rate of exchange and excluding the value of exchange certificates; beginning 1956, including the value of exchange certificates.

d. Figures for 1954-1958, excluding foreign aid. From 1959 onwards figures including foreign aid.

e. Figures prior to 1956, relating to private account only. From 1956 onwards figures including government account.

f. Imports valued f.o.b.

g Excluding trade with the Federation of Malaya.

h See footnote g to table 6.

i. Averages of Jan-Jun.

9. VALUE OF EXPORTS BY PRINCIPAL COMMODITIES AND OR COMMODITY GROUPS

Monthly averages or calendar months

Millions

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
BRUNEI *(Malayan dollar)*													
Crude petroleum	21.85	23.91	25.78	26.14	25.04	24.38	24.43	24.58	23.40	. . .	. . .	. . .	. . .
Natural rubber	0.12	0.33	0.35	0.20	0.18	0.34	0.30	0.34	0.45	. . .	. . .	. . .	. . .
BURMA *(kyat)*													
Rice and products	79.4	68.1	72.3	66.7	56.9	62.8	60.7	84.2	58.7	84.7	84.9	. . .	. . .
Natural rubber	2.4	2.7	3.7	3.1	2.2	3.0	3.8	2.1	2.5	4.7	0.6	. . .	. . .
Teak	2.0	1.8	2.8	5.6	4.3	5.7	3.9	6.2	6.2	5.9	7.8	. . .	. . .
Raw cotton	4.2	3.2	4.3	*2.1*	*1.3*	*1.8*	*2.7*	*2.0*	*1.7*	4.1	3.4	. . .	. . .
Base metals and ores	3.8	4.9	5.2	3.9	2.9	3.5	3.3	4.0	3.7	2.9	. . .	. . .	. . .
CAMBODIA *(riel)*													
Rice	69.5	9.3	20.6	55.8	64.6	67.1	123.3	57.8	63.4	67.1	48.8	. . .	. . .
Maize	16.9	12.5	15.9	14.8	18.7	18.1	11.9	10.4	36.6	24.0	12.5	. . .	. . .
Natural rubber	34.3	51.1	42.2	47.7	51.2	57.9	40.5	97.2	40.8	62.9	47.9	. . .	. . .
CEYLON *(rupee)*													
Tea	93.6	99.5	87.0	85.1	94.2	87.1	81.9	90.2	97.4	93.7	89.8	89.0	101.6
Coconut and products	18.2	19.0	18.0	13.3	13.6	20.3	18.8	22.5	22.4	12.5	14.6	14.7	23.9
Natural rubber	23.8	29.2	24.4	25.0	21.5	24.8	29.2	20.6	25.1	48.0	27.0	21.4	25.4
CHINA (Taiwan, *new Taiwan dollar*)													
Rice	9.4	37.3	34.4	37.0	54.4	70.9	99.6	—	91.0	4.1	48.4	—	—
Fruits, fresh, dried and preserved	10.7	12.3	18.4	16.2	26.3	43.5	58.5	45.2	41.2	32.0	54.8	76.4	56.9
Tea	12.1	7.0	10.2	11.8	13.1	21.0	19.2	13.3	37.2	19.1	12.5	17.3	21.3
Sugar	70.2	79.6	127.6	191.0	166.8	193.4	257.0	81.3	125.3	267.7	263.4	74.7	184.1
FEDERATION OF MALAYA[a] *(Malayan dollar)*													
Natural rubber	75.3	132.0	114.8	108.7	99.8	143.5	122.9	154.1	174.7	169.4	156.2	139.3	140.6
Iron ore	1.8	2.7	4.3	5.5	5.2	8.3	10.8	11.7	7.3	7.2	15.2	16.0	17.2
Vegetable oils	7.2	7.2	8.3	7.7	7.3	6.8	7.2	8.0	7.2	7.0	6.4	7.1	9.6
Tin metal	18.4	19.3	28.4	26.6	19.7	24.5	20.8	24.5	29.3	36.8	34.3	47.3	55.9
INDIA *(rupee)*[b]													
Food	144.8	131.2	157.6	[b] 149.3	160.3	161.8	*105.3*	*191.0*	*230.7*	*149.4*	*99.8*	*120.3*	*182.6*
Tea	109.4	94.3	118.5	102.8	113.8	105.3	*55.3*	*133.1*	*165.9*	*77.4*	*41.1*	*75.9*	*126.2*
Spices	12.0	8.8	7.7	7.0	7.4	8.5	*5.5*	*7.8*	*13.8*	*21.1*	*12.4*	9.4	*10.3*
Crude materials, inedible, except fuels	73.2	98.3	84.2	103.8	85.1	97.7	*95.8*	*96.8*	*101.5*	*99.1*	*107.1*	76.2	*82.4*
Hides and skins, undressed	5.7	5.6	5.1	5.8	6.0	8.9	*8.1*	*8.5*	*10.3*	*10.6*	*10.0*	5.2	*6.0*
Cotton raw and waste	15.4	28.9	20.9	15.6	17.7	13.6	*13.0*	*15.9*	*9.7*	*9.7*	*9.1*	7.2	*7.6*
Vegetable oils	7.4	31.2	17.4	9.5	6.2	11.6	*9.9*	*11.4*	*21.3*	*7.2*	*13.3*	13.5	*10.0*
Chemicals	4.7	4.1	4.5	4.6	3.7	4.1	*3.4*	*4.8*	*4.6*	*5.1*	*4.9*	5.5	*6.7*
Leather and manufactures	18.2	19.0	18.7	18.1	15.3	24.0	*23.9*	*27.0*	*27.7*	*23.7*	*22.8*	*19.1*	*20.3*
Cotton yarn and fabrics	59.7	53.0	51.9	57.2	43.9	55.1	*38.3*	*60.7*	*75.5*	*55.5*	*51.1*	59.7	*51.1*
Jute yarn and fabrics	101.2	102.9	94.6	49.6	49.6	55.5	*50.6*	*59.6*	*56.1*	54.2	63.6	50.8	*69.9*
Other manufactured goods	29.3	31.3	30.9	109.7	81.1	75.2	68.8	81.4	85.4	69.6	89.6	103.7	122.7

9. VALUE OF EXPORTS BY PRINCIPAL COMMODITIES AND/OR COMMODITY GROUPS *(Cont'd)*

Monthly averages or calendar months

Millions

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
INDONESIA (*rupiah*)													
Tea	37.9	29.7	28.3[r]	28.4	23.6	19.2	26.7	16.3	20.0	108.8	105.9	88.5	100.0
Copra	55.1	40.4	43.3[r]	42.9[r]	19.9	30.2	24.1	12.2	56.3	150.9	97.4	102.1	95.4
Natural rubber	257.6	410.0	342.7[r]	332.0	248.2	396.6	409.9	388.6	514.5	1,543.8	1,645.6	1,467.3	940.1
Tin ore	58.4	56.9	60.5	52.9	35.9	34.0	36.5	29.8	40.4	186.8	157.5	271.3	163.5
Petroleum and products	215.8	205.0	242.5[r]	287.7[r]	268.2	219.8	420.0	215.3	99.3	818.1	752.9	735.3	204.0
IRAN* (*rials*)													
Fruits, fresh, dried and preserved	125.5	97.8	113.2	124.7	*127.5*	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Raw cotton	215.2	139.5	139.7	160.4	93.8	*139.6*	79.0	36.0	232.0	. . .	. . .	. . .	. . .
Petroleum and products	167.3	783.8	1,325.7	1,608.1	1,904.9	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Carpets, hand made	104.6	104.7	105.3	123.2	110.4	*123.1*	100.7	116.3	143.0	. . .	. . .	. . .	. . .
JAPAN (*thousand million yen*)													
Food	3.92	3.98	5.32	5.36	6.92	7.63	5.54	8.42	9.79	6.63	6.84	7.56	6.29
Fish and fish preparations	2.23	2.27	3.62	3.66	5.13	5.35	3.41	5.98	7.31	4.08	4.36	4.49	3.99
Crude materials, inedible except fuels	2.50	2.94	2.86	2.79	2.27	3.28	2.97	3.80	4.24	3.08	3.63	4.59	4.06
Textile fibres, raw	1.54	1.74	1.65	1.74	1.13	1.98	1.58	2.44	2.89	1.88	2.23	3.21	2.76
Chemicals	2.37	2.82	3.21	3.79	4.13	5.01	4.85	4.38	4.94	5.25	5.21	4.04	4.68
Textiles	16.50	17.55	20.81	24.44	21.17	22.78	21.63	22.48	27.49	23.48	25.08	27.12	27.04
Base metals and manufactures	7.51	11.61	10.24	9.70	11.15	12.05	11.57	11.84	14.54	13.19	15.80	16.57	17.46
Machinery	3.86	3.83	5.07	6.21	7.08	11.16	10.08	11.81	15.34	12.08	14.57	15.61	13.95
Transport equipment	2.20	3.57	9.56	12.75	11.91	13.34	13.00	12.62	14.88	13.15	10.27	11.46	17.24
Other manufactured goods	9.22	12.97	16.76	20.12	20.10	27.00	26.53	29.62	32.17	26.64	32.29	33.66	30.97
KOREA, Republic of (*hwan*)													
Food	67	43	58	152	159	251	428	122	247	256	549	177	425
Crude materials, inedible except fuels	427	566	842	586	590	744	1,100	863	493	685	1,274	1,676	1,355
Chemicals	32	47	36	24	1	11	8	11	16	30	34	10	24
Manufactured goods	26	65	108	169	165	161	215	172	194	187	533	368	490
LAOS (*kip*)													
Wood and lumber	. . .	1.00	0.28	0.13	0.58	1.07	0.22	3.00	0.96	0.12	0.32	. . .	. . .
Tin ore	. . .	0.75	1.34	1.50	1.60	2.11	3.15	1.86	2.23	3.42	3.57	. . .	. . .
Gums and resins	. . .	0.59	0.74	0.63	0.49	0.29	0.50	0.30	0.20	0.41	0.32	. . .	. . .
Plants for use in medicine and perfumery	. . .	0.09	0.24	0.13	0.58	0.84	2.30	0.42	0.31	0.51	0.13	. . .	. . .
NORTH BORNEO (*Malayan dollar*)													
Copra	1.15	1.18	1.94	2.00	2.68	2.93	2.74	3.19	3.35	3.15	3.94	. . .	. . .
Rubber	2.03	3.84	3.36	3.10	2.74	3.92	3.36	3.98	5.02	4.26	4.42	. . .	. . .
Timber	1.46	1.81	2.18	2.63	3.03	5.09	4.80	6.11	6.52	6.08	7.46	. . .	. . .
PAKISTAN (*rupee*)[c]													
Tea	3.9	2.9	4.5	2.0	2.8	2.4	0.1	3.1	5.9	2.8	—	—	. . .
Raw jute	45.4	58.0	62.6	65.2	70.0	56.7	42.4	41.7	82.3	62.6	56.4	24.0	. . .
Raw cotton	29.1	33.6	30.3	27.6	20.0	10.1	13.0	8.5	4.8	19.5	30.1	8.7	. . .
Raw wool	3.5	5.6	5.9	8.6	4.0	5.1	6.7	3.7	4.5	6.6	10.2	2.4	. . .
Hides and skins	2.8	2.6	3.3	3.4	3.4	6.8	5.6	5.7	5.7	6.8	8.2	5.0	. . .
PHILIPPINES (*peso*)													
Coconut and coconut preparations[r]	26.7	24.7	28.5	28.1	29.9	29.8	22.6	37.3	36.7	28.2	31.7	. . .	. . .
Sugar and related products[r]	17.6	17.7	16.8	13.8	19.3	18.8	26.2	14.3	15.7	19.1	32.4	. . .	. . .
Fibres and manufactures[r]	4.4	4.6	5.8	6.5	4.8	6.5	7.0	6.5	6.8	9.2	6.5	. . .	. . .
Minerals and metals[r]	3.6	4.3	6.3	6.6	6.1	7.0	7.0	8.9	6.2	7.1	8.2	. . .	. . .
Logs, lumber and timber	5.9	6.9	8.1	7.5	11.6	13.4	14.7[g]	16.6	13.5	14.0	18.7	. . .	. . .
SARAWAK (*Malayan dollar*)													
Pepper	3.64	2.64	2.05	1.44	1.26	1.51	0.94	2.07		1.17	1.17	. . .	. . .
Rubber	2.87	6.64	5.86	6.20	5.11	8.04	6.20	9.88		10.81	13.97	. . .	. . .
Timber, sawn and logs	1.16	1.83	1.59	1.63	1.63	2.59	2.12	3.06		3.63	3.70	. . .	. . .
Mineral fuels, lubricants and related materials	24.46	26.74	28.85	30.51	27.83	28.26	29.22	27.30		25.52	23.32	. . .	. . .
SINGAPORE (*Malayan dollar*)[d]													
Rubber	66.2	115.9	102.0	95.5	85.8	125.3	117.0	134.6	147.7	130.4	131.0	123.0	. . .
Mineral fuels	29.4	31.2	36.2	36.9	30.2	28.6	31.5	27.0	25.7	26.3	26.0	20.0	. . .
Vegetable oils	4.5	3.9	3.9	4.7	3.6	3.3	3.0	3.5	4.0	3.5	4.4	2.5	. . .
Tin metal	16.3	16.9	11.6	11.1	4.0	0.4	0.5	0.2	0.1	0.4	0.2	0.1	. . .
THAILAND (*baht*)[e]													
Rice	257.2	261.1	238.4	301.9	248.0	215.9	229.5	182.6	214.6	219.5	221.7	276.7	276.1
Natural rubber	92.4	150.2	127.2	117.2	110.6	194.7	137.3	221.7	211.8	267.8	206.1	128.9	228.2
Teak	17.6	22.0	25.5	21.8	19.9	20.4	16.7	20.3	26.9	28.7	35.3	30.1	34.2
Tin ore and concentrates	31.1	36.7	42.3	44.3	21.2	36.2	26.7	51.5	43.6	47.4	39.9	40.3	30.7
VIET-NAM (*piastre*)[f]													
Rice and products	64.2	26.2	1.1	59.3	40.6	69.2	58.9	100.1	73.9	76.3	114.3	86.3	. . .
Natural rubber	68.7	122.7	107.0	140.8	103.5	136.8	97.3	143.3	220.1	108.5	126.1	143.8	. . .

GENERAL NOTE: See table 6.

a. Including trade with Singapore.

b. Figures for 1954 to 1956, reclassified by ECAFE Secretariat, may not conform exactly to the new classification from 1957.

c. Figures prior to 1956, relating to private account only. From 1956 onwards, figures including government account.

d. Excluding trade with the Federation of Malaya.

e. Baht value is obtained by converting foreign currencies at free market buying rate.

f See footnote g to table 6.

g. Averages of Jan-Jun.

10. QUANTITY OF EXPORTS OF MAJOR COMMODITIES

Monthly averages or calendar months

Thousand tons

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
RICE													
Burma	129.6	141.5	162.1	155.7	127.7	150.4	139.4	192.9	154.4	209.9	205.4	*177.1*	*109.8*
Cambodia	24.7	8.4	5.8	19.2	21.2	20.2	33.1	17.9	20.9	31.7	26.1	*28.1*	*40.8*
China (Taiwan)	3.0	14.2	9.1	10.1	14.9	13.3	18.8	—	17.1	0.8	9.2	—	—
Thailand	83.5	102.6	105.1	130.8	88.8	91.5	93.0	79.2	100.6	100.7	106.9	132.9	125.9
Viet-Nam[a]	14.6	‖ 6.8	‖ 0.4	15.7	9.8	20.8	14.2	30.3	22.9	24.2	41.3	32.3	38.6
SUGAR													
China (Taiwan)	43.5	48.8	50.0	62.4	68.1	61.2	83.0	25.6	40.3	91.1	86.4	24.5	60.6
India	...	...	...	16.4	7.0	4.1	7.7	2.6	0.9	1.3	0.9	2.8	1.5
Indonesia	17.7	14.7	14.1	12.2	7.4	3.3	—	1.4	11.8	2.1	2.5	8.4	3.5
Philippines	72.4	77.2	74.4	59.1	80.8	77.8	110.4	56.9	67.4	84.1	128.4	...	...
TEA													
Ceylon	13.6	13.6	13.2	13.3	14.3	15.0	15.8	15.1	16.1	15.6	15.5	16.4	17.8
China (Taiwan)	1.3	0.6	0.9	1.0	1.0	1.2	1.4	0.8	2.2	1.0	0.9	1.0	1.1
India	16.8	13.6	19.5	16.5	18.9	17.7	9.3	21.7	26.6	13.0	7.0	12.7	18.8
Indonesia	3.4	2.4	2.9	3.0	2.9	2.5	3.5	2.1	2.5	2.8	2.9	2.6	3.0
Japan	1.4	1.2	0.9	0.9	0.6	0.7	0.7	0.9	0.7	0.7	0.8	0.6	0.8
Pakistan	0.8	0.4	0.8	0.3	0.4	0.5	—	0.6	1.2	0.5	—	—	...
HIDES & SKINS													
India (*tons*)	1,220‡	1,174	1,048	1,083	1,003	1,087	1,100	1,032	1,093	1,079	918	712	847
Pakistan (*thousand pieces*)	811	749	878	856	887	979	1,138	963	1,152	939	1,226	215	...
COPRA[b] & COCONUT OIL													
Ceylon	8.3	11.8	10.3	6.4	5.2	8.2	8.0	7.1	8.5	4.3	5.2	3.4	11.1
Federation of Malaya[c,d] (coconut oil)	3.7	4.8	6.0	4.7	3.4	1.8	2.0	2.1	2.1	1.3	1.4	1.7	2.3
Indonesia (copra)	15.8	12.5	13.8	15.4	6.2	7.0	5.3	2.1	14.0	9.8	5.7	7.4	6.8
N. Borneo	1.4	1.9	3.2	3.4	3.7	3.2	2.7	3.8	3.6	3.3	4.8		5.0[g]
Philippines	45.5	48.4	59.8	57.6	50.0	41.1	25.9	54.1	54.6	40.0	49.4	...	...
Singapore (coconut oil)[c]	3.0	2.9	2.7	3.7	2.3	1.4	1.0	1.5	2.1	1.4	2.0	1.2	0.8
PALM OIL													
Federation of Malaya[c,d]	2.2	2.2	2.2	2.9	3.8	3.9	3.7	4.5	3.5	5.1	2.6	5.1	9.0
Indonesia	11.7	10.5	10.4	10.8	11.0	8.6	7.5	8.2	11.4	7.0	8.6	11.0	7.4
Singapore[c]	2.1	2.3	2.4	1.9	1.9	2.0	2.4	1.9	1.8	2.5	2.8	2.0	4.1
GROUND NUTS[b] & OIL													
India	2.5	14.8	2.8	0.4	0.6	4.7	3.5	1.1	8.9	2.5	2.1	1.0	1.0
NATURAL RUBBER													
Brunei	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Burma	1.0	1.0	1.0	1.1	0.9	1.0	*1.0*	*1.0*	*0.8*	*1.0*	*1.0*	*1.0*	*1.0*
Cambodia	2.0	2.2	2.4	2.6	2.8	2.8	1.8	3.4	3.5	2.9	1.9	3.8	2.5
Ceylon	7.6	8.2	7.3	8.0	7.7	7.8	7.0	6.9	7.6	13.3	6.9	5.8	7.3
Federation of Malaya[c,d]	35.3	37.9	36.6	38.9	39.0	43.3	40.0	45.7	43.3	41.8	37.3	37.6	42.2
Indonesia	61.7	61.1	56.6	56.4	50.5	60.0	64.9	57.1	69.3	48.4	50.4	45.2	33.1
N. Borneo	1.4	1.7	1.7	1.7	1.7	1.9	1.7	1.9	2.2	1.9	1.8	1.8	1.8
Sarawak	1.9	3.3	3.5	3.5	3.3	3.7	3.5	4.6	4.0	4.3	5.3	4.0	4.2
Singapore[c,e]	13.1	15.6	15.7	16.1	17.2	19.3	15.0	20.7	19.5	11.2	16.6	12.9	18.7
Thailand	9.9	11.0	11.3	11.3	11.6	14.4	10.2	15.7	13.9	16.1	12.3	7.6	14.8
Viet-Nam, Republic of	4.6	5.2	5.3	6.1	5.7	6.1	4.5	7.6	6.6	6.2	4.3	5.2	10.1
COTTON, RAW													
India	2.3	7.9	5.9	3.4	6.1	4.9	4.7	5.7	2.9	3.5	3.0	1.9	2.1
Iran[f]	3.0	3.7	3.2	3.3	3.6	3.4	2.6	...	...	...	...	...	...
Pakistan	11.8	14.0	10.9	9.6	8.1	4.5	5.8	3.7	2.2	8.5	12.5	3.3	...
COTTON YARN (*tons*)													
Fed. of Malaya and Singapore[d]	54	9	44	11	43	158	10	349	238	211	295	160	...
Hong Kong	1,172	1,228	1,183	1,262	1,166	1,118	1,338	1,320	941	1,029	1,293	1,419	1,082
Japan	1,117	991	1,032	1,217	936	917	836	913	906	2,296	2,886	3,026	2,724
COTTON PIECE GOODS (*million sq. metres*)													
Fed. of Malaya and Singapore[d]	2.7	5.0	4.5	4.5	4.2	3.2	4.1	2.6	2.8	3.0	3.1	2.8	...
Hong Kong	11.3	11.5	9.8	13.7	15.4	16.4	17.6	16.7	16.9	14.9	19.2	20.3	22.7
India (*million metres*)	65.6	56.9	56.7	67.1	47.4	64.6	47.9	68.6	92.5	59.3	52.8	58.9	49.1
Japan	89.0	79.3	87.9	102.3	86.8	88.0	82.2	87.4	101.2	84.2	83.4	93.2	97.6
JUTE													
Pakistan (raw)	74.3	81.8	71.5	65.4	75.5	67.4	52.1	54.0	96.8	79.8	60.6	21.5	...
India (bag and cloth)	67.8	79.6	67.9	‖ 65.9	‖ 67.2	73.2	65.5	83.4	80.9	57.3	71.2	60.1	93.4
HEMP, RAW													
Philippines	8.2	9.3	10.2	9.6	8.4	8.1	9.1	7.6	7.6	10.2	7.4	...	...
TIN CONCENTRATES (*tons*)													
Burma	52	79	71	*72*	*112*	*117*	*72*	*146*	*152*	*118*	*88*	*60*	*140*
Indonesia	2,874	2,689	2,638	2,318	1,553	1,560	1,511	1,565	1,917	2,267	2,002	...	...
Thailand	806	935	1,052	1,130	548	854	651	1,195	1,018	1,125	1,002	889	761
TIN METAL (*tons*)													
Federation of Malaya[c,d]	3,134	3,204	4,399	4,252	3,212	3,727	3,127	3,678	4,456	5,645	5,284	7,256	8,340
Singapore[c]	2,816	2,821	1,806	1,763	667	49	47	23	16	59	34	19	66
PETROLEUM & PRODUCTS													
Brunei (crude oil)	398	433	469	455	421	448	454	459	437	404	381	...	...
Fed. of Malaya and Singapore[d]	235	268	239	206	172	183	202	183	195	178	190	141	...
Indonesia	827	808	877	1,301	1,122	881	1,848	762	411	1,246	1,099	1,199	257

[a] Beginning June 1955, Republic of Viet-Nam only.
[b] In terms of oil equivalent.
[c] Net exports.
[d] Excluding trade between Singapore and Federation of Malaya.
[e] Excluding Federation of Malaya rubber transhipped at Singapore.
[f] Annual data: 12 months ending 21 July of year stated.
[g] Average of July-September.

11. INDEX NUMBERS OF QUANTUM, UNIT VALUE AND TERMS OF TRADE

1953=100[a]

	1952	1954	1955	1956	1957	1958	1959	1959			1960			
								II	III	IV	I	II	July	Aug
A. Quantum														
BURMA														
Imports	104	122	104	88	132	82	127	140	111	137	...	...	...	...
Exports	115	132	146	165	153	118	152	147	194	150	...	...	...	...
CEYLON														
Imports:[b] General	96	99	97	106	112	113	125	107	150	132	118	107	113	168
Exports:[b] General	97	103	109	104	99	107	105	99	111	111	113	104	109	130
Imports (*Central Bank index*)	99	93	96	105	111	112	126	102	154	132	123	108	120	170
Consumer goods	98	89	95	106	107	115	122	95	157	130	123	101	111	185
Capital goods	104	103	104	102	125	102	139	129	151	140	128	134	151	124
Exports (*Central Bank index*)	97	103	109	102	100	106	104	101	107	110	120	103	105	125
CHINA (Taiwan)														
Imports (*ordinary and ICA*)	81	105	98	94	102	113	125	130	156	116	106	162	...	...
Exports	67	69	86	83	97	118	111	142	56	102	121	130	...	...
FEDERATION OF MALAYA and SINGAPORE[c]														
Imports	116	107	128	140	139	139	139	145	137	148	*145*	...	...	...
Exports	109	110	118	127	130	130	130	126	135	137	*128*	...	...	...
INDIA‡				[i]										
Imports	108	118	125	147	168	151	159	162	153	154	148	176	158	...
Exports	100	105	115	110	119	108	119	102	130	144	106	101	97	...
JAPAN[d]														
Imports: General	74	104	109	138	172	142	179	189	178	193	218	218	228	226
Exports: General	92	133	174	208	232	240	285	267	289	334	286	308	324	324
PHILIPPINES														
Imports[e]	90	111	125	115	137	121	106	107	106	122	108	121	...	...
Exports	107	111	121	135	127	140	139	141	158	140	135	177	...	...
THAILAND														
Imports	82	103	110	113	121	118	128	129	128	141	140	130	129	136
Exports	102	96	113	119	131	109	121	108	121	136	139	123	110	132
VIET-NAM[f]														
Imports	103	113	90	77	95	82	85	87	85	99	86	84	75	89
Exports	123	113	132	85	155	122	164	133	197	221	147	131	195	302
B. Unit Value														
BURMA														
Imports	115	93	89	82	91	98	85	83	90	85	...	...	...	...
Exports	94	77	62	62	60	62	57	57	56	54	...	...	...	...
CEYLON														
Imports:[b] General	110	88	89	99	92	83	91	89	89	86	88	94	90	86
Exports:[b] General	98	112	117	109	104	102	107	108	105	112	111	110	102	103
Imports (*Central Bank index*)	108	92	86	90	95	87	86	90	88	87	88	87	91	87
Consumer goods	107	91	84	85	89	81	83	86	86	87	84	83	88	83
Capital goods	113	95	97	107	114	105	98	101	98	99	101	101	99	101
Exports (*Central Bank index*)	98	111	116	109	104	102	107	108	106	112	112	111	102	103
CHINA (Taiwan)														
Imports (*ordinary and ICA*)	111	108	111	106	110	106	99	104	97	95	106	97	...	...
Exports	113	105	110	105	116	100	90	90	85	93	82	88	...	...
FEDERATION OF MALAYA and SINGAPORE[c]														
Imports	108	90	92	91	96	91	93	91	96	97	*102*	...	...	...
Exports	125	94	120	110	105	95	115	114	119	126	*124*	...	...	...
INDIA‡				[i]										
Imports	109	97	95	99	107	100	98	98	88	95	98	99	97	...
Exports	109	107	98	102	102	101	99	98	100	101	108	109	110	...
INDONESIA														
Imports	110	91	91	89	88	96	83	80	78	89	*94*	...	...	...
Exports	113	96	110	103	99	89	88	92	110	120	*101*	...	...	...
JAPAN[d]														
Imports	114	96	94	97	103	89	83	83	84	82	86	85	83	81
Exports	108	96	91	94	97	94	95	96	96	97	97	98	99	99
KOREA,[g] Republic of (1957=100)														
Imports	...	...	...	...	100	92	86	86	85	85	85	85	84	81
Exports	...	...	...	...	100	82	90	87	92	96	104	103	108	102
PAKISTAN[h]														
Imports	102	98	105	112	124	134	129	130	130	130	132	...	...	...
Exports	142	107	104	98	105	97	90	89	87	91	90	101	...	...
PHILIPPINES														
Imports[e]	105	96	96	97	100	102	104	104	108	105	150	106	...	...
Exports	82	89	81	83	84	87	94	95	93	97	99	95	...	...
THAILAND														
Imports	97	105	106	106	109	105	104	102	105	105	105	105	106	105
Exports	102	111	109	100	99	102	108	106	109	107	112	112	114	114
VIET-NAM[f]														
Imports	81	101	95	90	99	93	86	83	85	88	89	91	92	91
Exports	88	94	99	92	97	85	85	82	84	91	87	82	83	84

11. INDEX NUMBERS OF QUANTUM, UNIT VALUE AND TERMS OF TRADE *(Cont'd)*

1953=100[a]

C. Terms of trade

Percentage of unit value index of exports to unit value index of imports

	1952	1954	1955	1956	1957	1958	1959	1959			1960			
								II	III	IV	I	II	July	Aug
BURMA	82	83	70	76	66	63	67	69	63	64	...	...	...	...
CEYLON	89	127	132	110	109	123	118	122	118	130	126	117	112	120
Ceylon (*Central Bank index*)	90	121	134	121	110	117	123	121	120	129	127	127	113	118
CHINA (Taiwan)	102	97	99	99	105	94	90	86	87	98	77	91	...	...
FEDERATION OF MALAYA and SINGAPORE	116	‖104	130	121	109	104	124	125	124	130	*122*	...	...	...
INDIA‡	100	110	103	‖103[i]	95	97	101	101	113	107	111	111	114	...
INDONESIA	103	106	120	116	112	93	106	115	142	136	*108*	...	...	...
JAPAN	94	100	96	97	94	106	114	115	114	118	113	115	119	122
KOREA, Republic of	...	...	...	...	100	90	105	101	108	114	122	121	129	127
PAKISTAN	139	109	99	88	85	72	70	68	67	70	68	...	...	...
PHILIPPINES	78	93	85	85	84	85	90	91	86	92	94	90	...	...
THAILAND	106	106	103	95	91	97	104	104	104	102	106	107	108	109
VIET-NAM	109	93	‖104	102	98	91	99	99	99	104	97	91	90	92

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a. Original base: *Burma*, Apr 1936-Mar 1941 for the period prior to 1953, 1952 since 1953; *China (Taiwan)*, 1952; *Ceylon*, 1948; *Federation of Malaya and Singapore*, 1938 for period prior to 1953, 1952 since 1953; *India*, Apr 1952/Mar 1953 prior to 1960, 1958 since 1960; *Indonesia*, 1950; *Japan*, 1950; *Republic of Korea*, 1957; *Pakistan*, Apr 1948/Mar 1949; *Philippines*, 1955; *Thailand*, 1953; *Viet-Nam*, 1949.

b. All trade indexes since 1950 except the annual import price index have been computed on a fixed base (1948) weights method. The annual import price index has been computed by using moving current weights.

c. Figures from 1953, though linked to previous figures, have different treatment in imports and exports of petroleum products.

d. Indexes compiled by Ministry of Finance.

e. Based on f.o.b. import prices.

f. See footnote g to table 6.

g. Index in terms of U.S. dollars.

h. Imports excluding land trade. Index in terms of U.S. dollars.

i. Calendar year from 1956.

12. INDEX NUMBERS OF PRICES RECEIVED AND PAID BY FARMERS

1953=100[a]

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
CHINA (Taiwan)													
Prices received by farmers (R)	92	102	110	122	122	136	127	138	150	167	..	...	...
Prices paid by farmers (P)	93	101	111	118	120	132	127	133	141	159	...	...	...
Cultivation cost	93	106	113	120	125	136	131	135	146	166	...	...	...
Domestic expenditure	92	100	109	117	117	130	126	132	139	156	...	...	...
Ratio (R) ÷ (P)	99	100	99	103	102	103	102	104	106	105	...	...	...
INDIA (Punjab)													
Prices received by farmers (R)	94	78	97	104	107	115	108	107	107	..	...	...	...
Prices paid by farmers (P)	98	86	96	104	108	117	115	114	114	...	...	...	...
Cultivation cost	92	79	91	95	105	116	112	110	110	...	...	...	...
Domestic expenditure	102	91	99	110	111	118	117	116	117	...	...	...	...
Ratio (R) ÷ (P)	96	90	101	100	99	98	94	94	93	...	...	...	...
INDIA (West Bengal, *1954=100*)													
Prices received by farmers (R)	100	102	118	135	143	141	137	157	148	145	...	...	...
Prices paid by farmers (P)	100	98	106	113	119	120	119	125	124	122	...	...	...
Cultivation cost	100	98	103	105	111	116	113	122	118	113	...	...	...
Domestic expenditure	100	97	108	118	124	122	122	126	128	127	...	...	...
Ratio (R) ÷ (P)	100	105	111	119	120	117	115	126	119	119	...	...	...
JAPAN[b] (*Apr 1953-Mar 1954=100*)													
Prices received by farmers (R)	98‡	95‡	98	99	97	97	96	97	98	93	95	97	99
Prices paid by farmers (P)	103‡	101‡	102	105	103	103	103	103	104	105	105	105	106
Cultivation cost	102‡	98‡	98	102	100	97	97	96	97	98	99	99	100
Domestic expenditure	103‡	103‡	103	106	105	107	106	107	108	108	108	108	109
Ratio (R) ÷ (P)	96‡	94‡	97	94	94	94	93	94	94	89	91	92	93

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a. Original base: *China (Taiwan)* 1952; *India, Punjab*, Sep 1938/Aug 1939; *West Bengal*, 1939; *Japan*, Apr 1951/Mar 1952.

b. Index numbers of commodity prices in 473 towns or villages. Annual figures prior to 1956 relate to fiscal year April to March.

13. INDEX NUMBERS OF WHOLESALE PRICES

1953 = 100[a]

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
BURMA													
All agricultural produce	100	96	99	114	112	103	99	105	111	106	110	117	...
Cereals	101	107	103	103	102	110	104	115	124	107	111	122	...
Non-food agricultural produce	114	107	103	124	137	121	127	112	115	121	118	113	...
CHINA (Taipei)													
General index	102	117	132	141	143	158	153	160	166	172	179	176	183
Food	105	114	123	135	142	165	157	168	177	186	195	193	205
Apparel	94	110	106	105	107	118	117	119	120	121	121	120	119
Metals and electrical materials[b]	102	158	190	197	189	186	184	187	188	190	206	205	202
Building materials	105	115	153	163	148	166	170	160	171	198	212	169	169
Manufactured products	104	120	143	162	158	167	165	167	174	178	184	180	181
Industrial materials	100	116	138	163	163	191	190	191	195	198	201	197	196
INDIA													
General index	96	88	99	104	107	110	109	112	114	114	117	120	120
Food articles	92	80	93	100	105	111	109	113	114	110	112	116	...
Industrial raw materials	97	91	105	110	107	112	111	113	116	122	129	128	127
Manufactured articles	102	101	106	109	110	111	110	111	114	118	121	123	...
Intermediate products	99	99	112	110	111	113	110	111	118	123	127	132	...
Finished products	102	101	106	109	110	111	110	111	113	117	120	121	...
INDONESIA (Djakarta) (imported goods)													
All articles	109	145	135	160	247	...	...	...	...	...	...	...	...
Provisions	110	144	146	178	244	...	...	...	...	...	...	...	...
Textile goods	110	169	118	137	248	...	...	...	...	...	...	...	...
Chemicals	109	151	137	141	208	...	...	...	...	...	...	...	...
Metals	98	115	135	169	234	...	...	...	...	...	...	...	...
IRAN (Teheran)													
General index	118	115	123	123	119	123	122	122	128	129	...	136	138
Domestic products	124	117	124	131	133	146	145	144	155	154	...	154	157
Imported products	107	105	96	88	82	85	85	86	87	92	...	95	90
Exported products[c]	117	116	136	134	125	121	120	120	123	123	...	139	144
JAPAN													
General index	99	98	102	105	98	99	98	99	101	101	100	100	101
Edible farm products	112	112	109	112	117	116	116	116	116	117	120	119	119
Textiles	92	87	88	82	75	77	75	78	80	78	76	75	76
Chemicals	93	90	94	95	88	85	85	85	86	86	87	87	97
Metal and machinery	94	97	116	119	103	105	105	106	106	106	105	104	104
Building materials	104	96	104	115	107	110	108	109	113	112	111	111	112
Producer goods	96	95	103	107	98	99	98	99	100	99	99	98	98
Consumer goods	103	101	100	102	99	100	99	100	102	103	103	103	104
KOREA, Republic of *(1955=100)*													
General index	...	100	132	153	143	147	145	152	153	156	163	167	172
Foods	...	100	141	168	145	138	142	146	136	142	161	173	180
Metal products and machinery	...	100	130	162	159	176	171	179	187	192	200	194	193
Building materials	...	100	121	135	144	165	153	166	191	188	196	193	194
Fibre and fibre products	...	100	122	127	126	128	121	131	140	138	131	130	138
Producer goods	...	100	138	156	156	174	167	179	190	192	194	191	194
Consumer goods	...	100	129	152	138	136	136	141	138	141	151	157	164
PHILIPPINES (Manila)													
General index	95	92	95	99	103	104	103	104	106	107	106	107	109
Food	97	95	96	102	105	98	97	98	100	99	101	103	97
Crude materials	88	84	90	92	99	117	118	112	119	122	115	116	113
Chemicals	95	88	88	93	96	100	99	100	100	100	99	95	95
Manufactured goods	96	92	100	103	104	110	108	112	114	115	112	113	113
Domestic products	94	92	94	98	101	101	101	101	103	104	103	104	106
Exported products	88	81	84	88	98	111	114	105	110	113	106	107	107
Imported products	97	92	100	106	110	120	117	123	125	125	126	126	126
THAILAND (Bangkok)													
General index	98	114	117	118	123	115	116	117	113	115	109	112	116
Agricultural produce[d]	98	136	130	130	143	134	134	133	135	133	128	129	132
Foodstuffs[d]	96	108	116	115	122	111	112	114	105	110	99	104	110
Clothes	99	102	101	101	101	101	101	100	100	100	101	102	102
Metal	97	126	139	141	108	116	115	116	123	123	123	123	123
Construction materials	103	104	103	105	103	103	103	103	104	104	104	103	103
VIET-NAM (Saigon-Cholon)													
General index	105	117	122	123	124	113	118	123	117	113	121	126	128
Rice and paddy	83	99	113	106	119	76	94	104	87	77	87	99	108
Raw materials	117	145	131	139	126	138	134	139	152	159	169	159	152
Semi-finished products	120	123	131	138	129	126	128	127	128	123	121	127	124
Manufactured products	120	124	121	111	117	111	122	114	115	118	121	121	121
Local products	100	116	123	121	123	106	111	119	110	106	116	121	123
Imported products	121	121	124	130	131	129	134	130	130	131	132	136	139

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[a] Original base: *Burma*, 1938-40; *China (Taiwan)*, Jan-Jun 1937 prior to 1959, 1956 since 1959 except indexes of manufactured products and industrial materials for which the base is 1951; *India*, Apr 1952/Mar 1953; *Indonesia*, 1938; *Japan*, 1952; *Republic of Korea*, and *Philippines*, 1955; *Thailand*, Apr 1938/Mar 1939; *Viet-Nam*, 1949.

[b] Beginning 1959, metals and manufactures thereof.

[c] Excluding petroleum.

[d] Agricultural produce including paddy, rice meal, copra, rubber, etc.; foodstuffs including milled rice, pork, bananas, etc.

14. PRICE QUOTATIONS OF MAJOR EXPORT COMMODITIES

	Unit	1953	1954	1955	1956	1957	1958	1959	1959			1960			
									II	III	IV	I	II	July	Aug
RICE															
Burma	*£ per L. ton*	60.0	49.0	41.1	35.6	34.2	37.0	32.9	33.0	32.7	32.0	32.0	32.0	32.0	—
Cambodia	*Ri per 100 kg.*	375	337	379	. . .	335	382	356	350	359	363	360	345	393	420
China(Taiwan)	*NT$ per m.ton*	3,527	3,133	2,634	3,776	3,644	3,643	5,309	5,309	—	5,311	5,312	5,239	—	—
Thailand	*£ per L. ton*	63.4	57.3	50.5	48.9	49.8	53.1	47.7	49.1	48.4	45.7	43.8	41.9	44.0	49.1
SUGAR															
China (Taiwan)	*US$ per ton*	98.2	104.9	104.6	104.3	139.3	98.4	84.4	85.5	82.8	85.8	81.3	83.4	. . .	. . .
India	*Rs.per maund.*	28.4	31.1	28.1	27.9	30.8	32.5	36.0	35.7	35.7	37.0	37.5	37.5	37.5	37.5
Indonesia	*Rp.per 100kg.*	285	308	306	302	350	418	440	440	440	440	440	440	440	440
Philippines	*Peso per picul*	15.2	14.9	13.8	14.0	14.8	15.3	14.9	14.9	15.1	15.0	14.5	15.9	16.4	18.0
TEA															
Ceylon[r]	*Rs. per lb.*	1.92	2.61	2.20	2.19	1.87	1.72	1.95	1.82	2.06	2.19	2.05	1.82	1.83	. . .
China (Taiwan)	*NT$ per kg.*	9.64	11.25	11.49	11.96	10.08	12.67	16.20	17.10	17.84	15.04	17.88	16.55	17.26	19.80
India	*Rs. per lb.*	2.00	3.18	3.05	2.58	2.63	2.52	2.43	2.18	2.68	25.4	2.33	2.52	3.11	. . .
Indonesia	*Rp.per 100kg.*	1,037	1,469	1,459	*1,072*	*1,097*	*1,116*	*1,039*	*1,091*	*1,012*	*881*	*4,417*	. . .	. . .	. . .
PEPPER															
Cambodia	*Ri.per 63.42 kg.*	6,238	4,663	3,507	4,350	4,771	3,465	2,827	2,650	2,783	3,092	3,875	4,200	5,350	5,250
India	*Rs.per maund*	285.9	162.4	131.6	110.9	77.7	71.7	100.2	92.5	95.0	119.2	205.2	235.8	244.5	245.0
Indonesia	*Rp.per 100kg.*	2,583	1,478	745	*551*	*469*	*457*	*492*	*438*	*480*	*615*	. . .	*2,674*	. . .	. . .
Sarawak	*M$ per picul*	313.7	159.6	109.6	70.2	69.5	66.9	82.6	72.9	— 88.5 —		190.4	182.4	. . .	. . .
Singapore	*M$ per picul*	395.3	204.8	135.6	94.7	72.8	69.8	93.4	75.0	88.7	138.3	230.2	192.8	200.0	184.9
HIDES															
Pakistan	*Rs.per 28 lbs.*[a]	21.61	25.54	31.72	29.49	29.08	29.24	104.36	101.04	117.03	120.00	125.56	120.0	. . .	110.0
SKINS															
India	*Rs.per 100 pcs.*	336.0	320.0	287.6	300.4	353.1	336.9	392.9	375.0	388.3	433.3	441.8	379.2	350.0	325.0
Pakistan	*Rs.per 100 pcs.*	178.7	208.2	211.9	254.6	287.4	252.5	301.5	274.2	365.8	331.2	380.6	429.2	. . .	350.0
GROUNDNUTS															
India	*Rs.per maund*	29.11	21.36	15.94	24.42	25.34	25.15	28.58	28.83	30.36	28.78	30.64	32.49	35.37	34.40
COPRA															
Ceylon	*Rs. per candy*	267.2	246.8	209.5	212.2	239.8	264.8	302.6	302.9	299.8	313.7	323.0	295.4	272.3	265.6
Federation of Malaya	*M$ per picul*	35.30	30.68	26.38	25.70	26.85	35.13	41.29	42.17	38.83	41.00	40.33	33.33	32.50	. . .
Indonesia	*Rp.per 100kg.*	219	194	193	178	*156*	*179*	*237*	*231*	*221*	*240*	*777*	. . .	. . .	. . .
Philippines	*peso per100kg.*	36.62	30.76	27.12	26.02	28.43	37.70	46.66	50.35	39.20	45.20	46.70	39.23	39.50	37.50
Singapore	*M$ per picul*	37.59	32.55	28.14	27.45	27.34	33.89	40.89	43.26	37.73	40.27	40.67	33.72	30.75	30.90
RUBBER, NATURAL															
Ceylon[r]	*Rs. per lb.*	. . .	1.54	1.51	1.51	1.46	1.30	1.42	1.43	1.47	1.45	1.49	1.65	1.44	1.40
Indonesia	*Rp.per 100kg.*	565	545	888	*821*	*746*	*641*	*804*	*778*	*838*	*905*	*3,731*	. . .	. . .	. . .
Singapore	*M Cents per lb.*	67.44	67.30	114.16	96.76	88.75	80.25	101.28	93.27	103.68	116.36	116.09	124.25	109.39	100.13
Thailand	*Baht per kg.*	7.30	8.17	13.59	11.25	10.87	10.33	13.92	14.35	14.93	15.92	17.34	17.74	18.11	. . .
United Kingdom	*Pence per lb.*	19.7	19.8	32.9	28.1	25.9	23.4	29.4	28.5	30.0	33.6	33.6	36.0	. . .	. . .
TIMBER															
Burma	*K.per cu.ton*	929	876	921	923	889	874	861	818	850	899	924	1,095	. . .	. . .
Federation of Malaya	*M$per 50 cu.ft.*	148.2	149.4	156.6	158.2	144.6	143.3	127.9	124.8	122.1	139.5	152.8	155.9	168.5	153.2
North Borneo	*M$per 50 cu.ft.*	118.3	82.9	77.9	77.5	66.1	64.7	74.6	70.6	75.7	90.9	123	62	. . .	. . .
Philippines	*Peso per 1,000 bd.ft.*[b]	109	117	114	112	105	102	106	104	104	114	— 94.1 —		. . .	. . .
Thailand	*Baht per cu. m.*	2,436	3,023	3,614	4,098	4,090	3,867	3,956	3,799	3,958	4,001	3,964	4,107	4,300	. . .
WOOL, RAW															
Pakistan	*Rs. per lb.*	2.09	2.25	2.15	2.70	2.77	2.06	2.33	2.34	2.52	2.30	2.46	2.50	2.70	2.60
COTTON, RAW															
Burma	*K. per lb.*	1.08	1.34	1.33	1.00	1.14	1.01	. . .	. . .	0.86	0.90	0.90	1.19	. . .	. . .
India	*Rs.per 784 lbs.*	710.0	734.0	635.8	786.7	766.7	732.0	767.6	770.8	794.0	—	840.0	840.0	840.0	840.0
Pakistan[r]	*Rs. per maund*	67.1	78.7	79.6	88.8	87.0	81.9	74.2	69.5	75.1	82.5	89.9	. . .	. . .	. . .
JUTE, RAW															
India	*Rs. per 400 lbs.*	132	148	172	173	207	192	190	185	192	198	199	248	. . .	. . .
Pakistan	*Rs. per 400 lbs.*	106	135	150	187	214	188	190	193	186	198	217	. . .	. . .	. . .
United Kingdom	*£ per L. ton*	96	102	98	103	114	110	111	114	108	111	115	133	. . .	. . .
HEMP, RAW															
Philippines	*Peso per picul*	38.4	28.8	31.0	37.4	46.8	39.2	57.6	57.1	61.6	60.8	66.9	63.0	60.0	. . .
GROUND NUT OIL															
India	*Rs. per quarter*	22.34	15.38	11.92	17.82	19.11	18.79	20.50	21.20	21.83	20.23	22.08	23.23	24.40	23.73
PALM OIL															
Indonesia	*Rp.per 100kg.*	214	204	220	*233*	*232*	*212*	*217*	*242*	*207*	*217*	*861*	. . .	. . .	. . .
COCONUT OIL															
Ceylon	*Rs. per L. ton*	1,519	1,454	1,156	1,168	1,256	1,396	1,688	1,668	1,751	1,736	1,756	1,608	1,419	1,314
Philippines	*Peso per kg.*	0.69	0.57	0.48	0.45	0.47	0.66	0.80	0.86	0.70	0.77	0.80	0.71	0.70	0.66
Singapore	*M$ per picul*	59	55	44	44	46	54	65	69	61	64	64	54	49	49
RAYON YARN															
Japan	*Yen per lb.*	229	209	173	172	171	151	148	145	150	152	147	147	147	147
COTTON PIECE GOODS															
India	*Rs. per lb.*	1.89	1.88	1.80	1.94	2.04	1.81	1.84	1.82	1.85	1.90	2.59	2.59	3.03	3.14
Japan	*Yen per yd.*	60	57	50	54	48	42	53	50	53	59	60	54	54	54
JUTE MANUFACTURES															
India (bag)	*Rs.per 100 bags*	98.8	111.8	115.6	111.2	114.6	98.6	98.1	94.3	101.5	105.0	113.2	131.0	129.0	141.3
India (hessian)	*Rs. per 100 yd.*	46.1	47.2	45.0	43.0	44.3	43.0	42.4	42.4	42.2	42.8	43.9	50.8	. . .	. . .
TIN															
Indonesia	*Rp.per m.ton*	19,377	14,215	14,986	*16,078*	*16,011*	*15,649*	*15,757*	*15,189*	*15,915*	*16,063*	*65,325*	*69,773*	64,940	66,798
Singapore	*M$ per picul*	363.9	353.6	365.5	397.0	373.2	369.3	396.9	399.4	399.8	393.1	389.9	388.6	402.2	402.5
Thailand	*Baht per kg.*	20.3	26.9	28.2	28.8	28.9	28.0	31.6	30.5	32.3	30.9	32.1	31.7	—	. . .

14. PRICE QUOTATIONS OF MAJOR EXPORT COMMODITIES *(Cont'd)*

	Unit	1953	1954	1955	1956	1957	1958	1959	1959			1960			
									II	III	IV	I	II	July	Aug
PETROLEUM, CRUDE															
Indonesia	*Rp.per m.ton*	76	160	160	*163*	*163*	*181*	*181*	*178*	*174*	*196*	*510*	*518*	*509*	553
Sarawak	*M$ per m.ton*	64	65	63	61	64	65	60	61	— 59 —		59	59	...	...
PETROLEUM PRODUCTS															
Indonesia	*Rp. per litre*	0.33	0.32	0.30	*0.31*	*0.30*	*0.32*	*0.31*	*0.31*	*0.30*	*0.33*	*0.98*	*0.98*	*0.94*	*0.92*

SPECIFICATIONS:

RICE: *Burma* — Average of export contract prices f.o.b. white rice, No. 1 small mills special ngasein. *Cambodia*—Wholesale prices of white rice No. 1—25% broken, at Phnom-Penh. *China (Taiwan)*—Unit value of export of rice and paddy. *Thailand*—Export price f.o.b. Bangkok, white rice 5% broken; prior to 1955 export contract price f.o.b.

SUGAR: *China (Taiwan)* — Monthly average price of all kinds of sugar f.o.b. Taiwan ports. *India* — Wholesale prices, D. 28 Kanpur. *Indonesia* — Domestic wholesale prices of white sugar, Djakarta. *Philippines* — Wholesale prices of centrifugal sugar, Manila.

TEA: *Ceylon*—Average weekly auction prices of weighted average for three grades of black tea in Colombo. *China (Taiwan)*—Unit value of export of black tea. *India*—Export price at Calcutta auctions, leaf, all types. *Indonesia* —Export prices f.o.b. for B.O.P., O.P., P.S. and B.P.

PEPPER: *Cambodia*—Wholesale prices, black ex-store. *India*—Wholesale prices, ungarbled (alleppey) Calcutta. *Indonesia* — Export prices, f.o.b. black Lampong. *Sarawak* — Unit value of exports of black pepper. *Singapore* — Average wholesale prices, black Lampong.

HIDES: *Pakistan* — Average wholesale prices of Karachi unframed arsinicated mixed 12/40 lbs. (buffalo), Karachi, since August 1959 10/40 lbs.

SKINS: *India* — Wholesale prices of raw goat skin, average quality, Calcutta. *Pakistan* — Average wholesale prices of sheep skin, Papra (dewooled all primes), Karachi.

GROUNDNUTS: *India* — Wholesale prices of ground nuts, machine shelled, Cuddalore.

COPRA: *Ceylon* — f.o.b. prices for all grades. *Federation of Malaya* — Wholesale prices, sundried. *Indonesia* — Export prices f.o.b. mixed. *Philippines* — Wholesale prices, resecada, Manila. *Singapore* — Wholesale prices, sundried.

RUBBER, NATURAL: *Ceylon*—Unit value of exports of rubber sheet. *Indonesia* —Export prices f.o.b. R.S.S. 1 and Crepe 1. *Singapore*—Buyers' midday prices, f.o.b. Singapore No. 1 RSS in bales. Annual prices are the averages of daily prices, *Thailand* — Unit value of exports of rubber smoked sheet. Annual figures relate to whole kingdom, monthly and quarterly figures relate to Port of Bangkok only. *United Kingdom* — domestic/import price cif London, No. 1 RSS.

TIMBER: *Burma* — Unit value of teak exports. *Federation of Malaya* — Unit value of net exports of timber. *North Borneo* — Unit value of sawn logs for 1953-1954; sawn logs and veneer logs, non-coniferous from 1955 to date. *Philippines* — Unit value of exports of logs and lumber. *Thailand* — Unit value of exports of teak board. Annual figures relate to whole kingdom, monthly and quarterly figures relate to Port of Bangkok only.

WOOL, RAW: *Pakistan* — Unit value of exports.

COTTON, RAW: *Burma* — Unit value of exports. *India* — Wholesale prices, Jarilla M.G.F., Bombay; since August 1959-Jarilla M.G. Madhya Pradesh 25/32" Staple, Bombay, *Pakistan*—Monthly average wholesale prices of 289 F. Punjab R.G. Karachi.

JUTE, RAW: *India* — Domestic price at Calcutta, raw lightnings. *Pakistan* — Domestic/export f.o.b. Chittagong, raw, baled, export firsts. *United Kingdom* — Domestic/import price c. and f. Dundee, Pakistan mill firsts.

HEMP, RAW: *Philippines* — Domestic/export price at Manila, Manila Hemp, Grade G.

GROUND-NUT OIL: *India* — Wholesale prices, naked, Bombay.

PALM OIL: *Indonesia* — Export prices f.o.b.

COCONUT OIL: *Ceylon* — f.o.b. prices for all grades. *Philippines* — Wholesale prices, Manila. *Singapore* — f.o.b. Singapore.

RAYON YARN: *Japan* — Export prices f.o.b. viscose, 120 denier hank, 1st grade.

COTTON PIECE GOODS: *India* — Wholesale prices of grey standard shirting (dyeing grey standard starting since 1960) 35" × 38 yds. Bombay. *Japan*— Export prices f.o.b., heavy shirting s/2003 grey 38"

JUTE MANUFACTURES: *India* — Export prices of bags, B-twills 2¼ lbs. 44 × 26½" (22 × 26½" since April 1960) f.a.s. Calcutta. *India*—Domestic/export prices of hessian cloth 10½ oz. 40" Calcutta.

TIN: *Indonesia* — Unit value of exports of tin and tin ore. *Singapore* — Export prices ex-works. *Thailand* — Unit value of exports of tin ore and tin in concentrates. Annual figures relate to whole kingdom, monthly and quarterly figures relate to Port of Bangkok only.

PETROLEUM, CRUDE: *Indonesia* — Unit value of exports of crude petroleum. *Sarawak* — Unit value of exports of crude petroleum.

PETROLEUM PRODUCTS: *Indonesia*—Unit value of exports of motor spirit.

[a] Since 1959, Rs per 82 lbs.

[b] Since April 1960, US dollar per m. ton.

15. INDEX NUMBERS OF COST OF LIVING

1953 = 100[a]

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
A. All items													
BURMA: Rangoon[r]	95	99	106	112	108	96	95	97	100	101	110	115	109
CAMBODIA: Phnom-Penh	108	121	127	127	135	141	137	143	147	148	147	152	152
CEYLON: Colombo	100	99	99	101	103	104	104	103	104	104	101	100	99
CHINA: Taipei	102	112	123	133	134‖	146	140	152	153	157	170	175	182
FED. OF MALAYA[b]	94	91	92	96	95	92	92	91	91	‖ 92	91	91	91
HONG KONG	98	95	97	98	96	104	104	108	100	102	100	100	97
INDIA[e] (*interim index*)	95	91	99	105	109	114	113	117	118	115	116	117	119
IRAN	118	122	130	139	141	155	159	153	158	162	166	162	164
JAPAN (*urban*)	106	105	106	109	108	110	109	110	111	112	113	114	115
KOREA: Seoul	137	‖231	284	350	339	353	351	356	363	368	388	389	393
LAOS: Vientiane	123	125	141	174	187	199	207	199	187	191	191	190	190
PAKISTAN[c] Karachi	98	94	97	106	110	106	104	108	112	114	114	115	113
Narayanganj	84	85	99	104	110	109	107	112	112	111	114	116	114
PHILIPPINES: Manila	99	98	100	102	105	104	102	105	107	105	106	109	112
SINGAPORE	93	91	92	94	92	92	91	91	92	92	92	91	91
THAILAND: Bangkok	100	105	111	118	125	119	123	118	114	116	114	118	123
VIET-NAM: Saigon	113	124	139	133	130	133	132	134	131	130	128	130	135
B. Food													
BURMA: Rangoon[r]	94	97	104	115	110	95	93	97	101	102	115	123	114
CAMBODIA: Phnom-Penh	103	119	130	129	141	143	144	146	146	145	143	146	146
CEYLON: Colombo	100	99	97	99	100	99	101	98	100	99	95	92	90
CHINA: Taipei	102	108	126	137	138‖	154	146	166	163	169	188	192	205
FED. OF MALAYA	90	87	88	93	91	88	88	88	88	89	87	88	87
HONG KONG	95	90	95	95	93	106	105	111	98	102	98	98	93
INDIA (*interim index*)	93	84	96	103	108	115	112	118	118	113	114	115	118
INDONESIA: Djakarta	106	141	161	177	258	311	300	321	319	364	385	402	397
IRAN	114	114	121	126	120	135	142	132	137	143	146	146	148
JAPAN (*urban*)	108	105	105	108	106	107	106	108	108	108	110	112	114
KOREA: Seoul	116	‖206	282	339	310	308	310	316	314	326	363	373	379
LAOS: Vientiane	122	118	122	157	176	189	199	189	172	174	175	169	171
PAKISTAN: Karachi	98	95	100	113	117	113	110	116	119	122	121	125	120
Narayanganj	79	80	97	102	105	105	102	108	110	109	111	113	112
PHILIPPINES: Manila	99	98	101	105	111	107	102	107	111	106	109	114	120
SINGAPORE	91	88	89	91	87	86	85	84	88	87	85	84	84
THAILAND: Bangkok	98	103	108	117	126	116	122	116	110	113	111	116	123
VIET-NAM: Saigon	107	121	140	129	125	124	123	126	121	120	115	118	125

GENERAL NOTES: All figures refer to working class expenditures except for the following countries: *Burma*, low and middle income group of household; *China (Taiwan)*, public servants prior to 1959, beginning 1959, major city consumers' prices; *Hong Kong*, clerical and technical workers; *Indonesia*, government employees; *Japan*, urban population; *Republic of Korea*, salary workers and wage earners; *Laos*, middle class; *Singapore*, low income clerks and labourers; *Thailand*, low salaried workers and civil servants.

a. Original base: *Burma*, 1958; *Cambodia*, 1949; *Ceylon*, 1952; *China (Taiwan)*, Jan-Jun 1937 prior to 1959, 1956 since 1959; *Hong Kong*, Mar 1947; *India*, 1949; *Indonesia* July 1938; *Japan*, 1951 for period prior to 1955, 1955 for subsequent years; *Republic of Korea*, 1955; *Laos*, Dec 1948; *Federation of Malaya*, Jan 1949 prior to 1960, 1959 since 1960; *Pakistan*, Apr 1948/Mar 1949; *Philippines*, 1955; *Singapore*, 1939; *Thailand*, Apr 1938/Mar 1939; *Republic of Viet-Nam, 1949.*

b. Excluding house rent prior to 1960, beginning 1960 including house rent.

c. Excluding house rent.

16. EMPLOYMENT

End of period

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
CHINA[a] (Taiwan, *thousand*)													
Mining	53	55	66	74	74	74	74	74	74	71	76	...	...
Manufacturing	258	258	260	261	261	263	262	262	263	266	270	...	...
Transport	64	66	68	71	73	77	75	75	77	77	77	...	...
FEDERATION OF MALAYA[b] (*thousand*)													
Estate[c]	297	309	309	307	314	311	..	...	...	...	...	...	...
Rubber	268	278	280	277	282	282	...	...	...	...	...	...	...
Tin mining	35	40	40	38	26	21	...	...	...	...	...	...	...
Government	...	171	171	189	187	182	...	...	...	...	...	...	...
INDIA (*thousand*)													
Factories under Factory act[d]	2,590	2,690	3,402	3,480	3,413	3,554	...	...	...	...	...	...	...
Cotton mills[d]	741	758	807	813	767	763	746	767	772	767	759	777	787
Coal mines[e]	341	348	352	370	364	364	361	361	358	379	375	363	...
Central government[f]													
Office workers	221	251	281	300	313	328	318	323	328	330	...	...	...
Manual workers	412	396	388	389	401	415	406	410	415	419	...	...	...
JAPAN[g] (*million*)													
All industries	39.6	40.9	41.7	42.8	43.1	43.7	44.9	44.5	44.2	42.1	45.7	46.0	45.4
Agriculture, forestry and hunting	16.5	16.9	16.4	16.1	15.5	15.4	17.0	16.2	15.8	13.2	16.2	15.8	15.4
Mining	0.6	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5
Manufacturing	7.0	7.1	7.6	8.1	8.6	8.5	8.2	8.6	8.5	8.7	9.2	9.2	9.1
Construction	1.7	1.8	1.8	2.0	2.0	2.2	2.2	2.2	2.1	2.3	2.2	2.2	2.4
Commerce	6.3	6.7	7.0	7.3	7.5	7.6	7.6	7.8	7.7	7.9	7.9	8.2	8.0
Transportation, communication and other public utilities	1.9	1.9	2.1	2.2	2.2	2.3	2.2	2.3	2.3	2.3	2.4	2.5	2.4
Services (non-government)	3.8	4.3	4.6	4.9	5.0	5.2	5.1	4.9	5.3	5.1	5.2	5.6	5.6
PHILIPPINES													
Index of employment[h] (1953=100)													
Mining	77	81	81	77	72	68	69	68	67	68	68	...	...
Manufacturing	106	106	107	113	113	119	119	116	120	125	122	...	...
THAILAND[i] (*thousand*)													
Mining	14.7	15.6	16.6	17.4	14.9	14.1	14.1	14.0	14.1	14.3	15.0	15.2	15.2

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a. Staff and permanent workers.
b. June for 1954, August for 1955, July for 1956 to 1959.
c. [illegible] rubber, oil palm, coconut, tea and pineapple.
d. [illegible]
e. Average daily employment in all coal mines governed by the Indian Mines Act. [illegible]
f. [illegible]
g. Average for the week ending on the last day of the month, except for December when the week prior to holiday seasons was chosen.
h. Comprising all full and part-time employees who were on the payroll i.e., who worked during, or received pay for, the pay period ending nearest the 15th of the month. Excluding proprietors, self employed persons, domestic servants and unpaid workers.

17. WAGES

Base for index numbers, 1953[a]

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
CEYLON													
Index of wages													
Tea and rubber estate workers[b]	102	106	107	108	110	110	110	110	110	110	109	108	108
Government workers (Colombo)[c]	100	104	106	109	125	125	125	125	125	125	125	125	125
CHINA (Taiwan)													
Index of earnings[d]													
Mining	105	131	174	227	243	246	244	248	254	262	270	..	...
Manufacturing	111	125	141	155	165	177	173	172	186	200	203	.	...
INDIA													
Wages or earnings (*rupees*)													
Cotton mills[e] (Bombay, *monthly*)	95.4	94.8	98.8	104.2	111.6	116.4	114.2	118.3	120.4	119.2	118.8	119.7	...
Coal mines[f] (Jahria, *weekly*)	14.2	14.2	17.4	20.5	22.0	22.8	23.0	22.6	23.1	23.1	23.7	24.0	...
JAPAN													
Index of earnings[g]													
Mining	101	108	118	137	140	145	135	159	166	132	141	174	193
Manufacturing	105	109	120	124	127	138	129	139	171	120	141	202	130
Daily money wages of agricultural labour, male (*yen*)	285	301	308	323	337	348	362	353	361	328	384	392	370
KOREA, Republic of													
Wages[h] (*thousand hwan*)													
Mining	...	...	...	26.7	27.8	32.7	32.2	32.6	34.6	34.1	34.0	36.1	36.6
Manufacturing	...	...	...	20.3	21.7	23.4	23.5	23.3	23.8	24.5	25.5	26.0	25.9
PHILIPPINES													
Index of wages[i] (Manila)													
Skilled	101	101	101	101	104	106	106	106	107	106	...	...	...
Unskilled	99	102	103	102	103	104	103	103	103	103	...	...	...

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a. Original base: *Ceylon*, 1939; *China (Taiwan)*, June 1949; *Japan*, 1955; *Philippines*, 1955.
b. Daily rates of minimum wages (basic wages plus special allowance).
c. [illegible]
d. [illegible]
e. Monthly minimum basic wages plus dearness allowance.
f. Average weekly earnings (basic wages plus dearness allowance and other payments) of underground miners and loaders in coal mines.
g. Average monthly cash earnings per regular worker.
h. Total monthly average earnings of production workers based on the payroll [illegible] throughout the [illegible] engaged in mining and manufacturing (excluding tobacco and salt manufacturing).
i. Daily average wage rates of all classes of workers.

18. CURRENCY AND BANKING

End of period

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
BURMA (*million kyats*)													
Money supply	842	1,116	1,343	1,106	1,311	1,485[r]	1,603	1,566	1,485[r]	1,599	1,560	1,565	1,517
Currency: net active	567	725	830	746	853	1,021[r]	1,122	1,070	1,021[r]	1,156	1,089	1,061	1,037
Deposit money	275	391	513	360	458	464	481	496	464	443	471	504	480
Private time deposits (Commercial banks)	77	122	103	100	118	212	121	130	212	156	144	151	163
Government deposits	297	248	248	282	281	262	294	336	262	306	303	. . .	. . .
Union Bank of Burma	183	130	117	77	50	48	26	55	48	53	40	. . .	. . .
Commercial Bank[a]	114	118	131	205	231	214	268	281	214	253	263	. . .	. . .
Bank clearings △	199	246	293	317	270	289	292	323	302	329	386	333	329
Foreign assets	643	540	652	446	576	642	665	691	642	599[r]	729	721	703
Union Bank of Burma	555	415	535	382	490	568	587	608	568	513[r]	645	640	618
Commercial banks	88	124	117	64	86	74	78	83	74	86	84	81	85
Claims on private sector (commercial banks)	212	216	250	343	270	305	263	265	305	396	359	355	367
Claims on government	543	941	1,020	1,002	1,185	1,375	1,401	1,399	1,375	1,426	1,238	1,245	1,261
Union Bank of Burma[b]	388	652	662	762	710	797	818	773	797	908	723	711	712
Commercial banks	155	289	358	240	475	578	583	626	578	518	515	534	549
Rates of interest (*% per annum*)													
Call money rate △	0.98	1.27	0.94	1.42	1.60	1.08	1.00	1.00	1.33	1,50	1.50	1.50	1.50
Yield of long term gov't bonds[c] △	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Exchange rate (selling)	4.808	4.778	4.808	4.775	4.785	4.790	4.760	4.780	4.790	4.775	4.775	4.770	4.765
CAMBODIA (*million riels*)													
Money supply													
Currency: in circulation	. . .	999	1,058	1,355	1,472	1,799	1,856	1,775	1,799	2,100	1,985	1,985	. . .
Demand deposits in commercial banks	. . .	1,035	1,104	693	885	1,143	1,160	1,063	1,143	1,280	1,444	. . .	. . .
Private time deposits	. . .	37	15	84	76	159	133	159	159	229	254	. . .	. . .
Bank clearings △	273	446	412	481	520	570	518	613	626	684	686	804	. . .
Foreign assets	. . .	1,968	2,559	2,911	3,442	3,505	3,757	3,718	3,705	3,951	3,780	. . .	. . .
Banque Nationale du Cambodge	. . .	1,751	2,454	2,756	3,366	3,566	3,672	3,552	3,566	3,765	3,636	3,684	. . .
Commercial banks	. . .	217	105	155	76	139	86	165	139	185	144	. . .	. . .
Claims on private sector	. . .	329	563	812	776	1,147	843	966	1,147	1,264	1,421	. . .	. . .
Claims on government by Banque Nationale du Cambodge	. . .	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	. . .
CEYLON (*million rupees*)													
Money supply	947	1,062	1,118	1,032	1,067	1,169	1,085	1,120	1,169	1,186	1,161	1,141	1,150
Currency: net active	342	384	401	435	530	565	546	550	565	578	594	592	582
Deposit money	605	677	717	597	537	604	538	569	604	608	567	550	577
Private time deposits	418	450	510	558	617	687[r]	644[r]	653[r]	687[r]	685[r]	725	734	733
Government deposits	69	116	176	128	164	100	136	108	100	102	66	79	59
Central Bank of Ceylon	16	42	67	12	28	18	18	21	18	14	12	15	12
Commercial banks	53	74	109	116	136	81	118	87	81	88	53	63	46
Bank clearings △	684	758	735	730	661	714	693	722	744	726	731	717	808
Bank debits[d] △	1,107	1,060	1,063	1,111	970	1,050	1,008	1,056	1,022	1,116	1,084	1,149	1,137
Foreign assets (net)	636	854	878	669	579	387	542	464	387	393	320	295	294
Central Bank of Ceylon	523	654	735	579	491	313	460	387	313	300	248	229	219
Commercial banks	113	200	143	90	88	75	82	77	75	93	72	65	74
Claims on the private sector (commercial banks)	247	256	344	399	436	458	447	462	458	486	493	501	502
Claims on government	622	601	682	771	918	1,225	993	1,074	1,225	1,225[r]	1,284	1,291	1,295
Central Bank of Ceylon	27	18	11	88	261	514	318	405	514	501[r]	584	586	602
Other banks	595	583	671	683	656	711	674	669	711	724[r]	699	705	693
Rates of interest (*% per annum*)													
Call money rate △	0.50	0.50	0.50	1.08	1.25	1.42	1.42	1.50	1.50	1.50	1.75	1.75	2.50
Treasury bill rate △	1.59	0.79	0.68	0.88	1.54	1.93	1.91	2.00	2.01	2.23	2.44	2.44	2.46
Yield of long term gov't bonds[e] △	3.79	3.13	3.04	2.99	2.91	2.76	2.79	2.74	2.70	2.65	2.61	2.83	2.84
Exchange rate (selling)	4.795	4.772	4.800	4.765	4.755	4.753	4.749	4.750	4.757	4.752	4.765	4.762	4.758
CHINA (Taiwan, *million new Taiwan dollars*)													
Money supply	2,103	2,636	3,261	3,938	5,238	5,981	5,410	5,377	5,981	5,892	5,927	5,869	5,962
Currency: net active	1,340	1,604	1,883	2,228	2,927	3,277	2,897	2,914	3,277	3,060	3,127	3,049	3,042
Deposit money	763	1,032	1,378	1,710	2,310	2.704	2.514	2.463	2.704	2,832	2,800	2,820	2,919
Private time deposits	887	1,010	1,049	1,473	2,687	3,476	3,448	3,279	3,476	3,683	3,910	4,013	4,125
Government deposits	810	998	1,295	1,606	1,738	1,955	1,879	2,061	1,955	2,143	2,298	2,246	2,255
Bank of Taiwan	743	826	1,167	1,441	1,551	1,727	1,685	1,837	1,727	1,885	2,070	2,035	2,025
Other banks	67	172	128	164	188	228	194	224	228	257	226	211	230
Counterpart funds	631	1,405	1,485	1,678	1,623	1,979	2,088	2,321	1,979	1,729	1,809	1,863	1,787
Bank clearings △	1,720	2,887	3,857	5,121	5,410	6,892	6,977	6,813	7,989	7,993	8,797	8,472	9,311
Foreign assets (net) Bank of Taiwan	134	504	528	649	1,708	1,524	1,974	1,439	1,524	1,691	1,992	1,949	1,972
Claims on private sector[f]	1,283	2,048	2,286	3,131	4,414	6,212	5,828	6,145	6,212	6,629	6,945	6,955	7,149
Bank of Taiwan	167	402	470	731	1,023	1,619	1,466	1,729	1,619	1,624	1,809	1,833	1,866
Other banks	1,116	1,646	1,816	2,400	3,391	4,593	4,362	4,416	4,593	5,005	5,136	5,122	5,283
Claims on government[g]	1,477	1,687	2,020	2,388	2,444	2,748	2,439	2,536	2,748	2,832	2,721	2,745	2,765
Bank of Taiwan	1,445	1,652	1,974	2,338	2,356	2,437	2,195	2,272	2,437	2,524	2,394	2,404	2,450
Other banks	32	35	46	50	88	311	244	265	311	308	326	341	314
Claims on official entitles[f]	1,596	1,958	2,475	2,817	3,058	3,179	2,711	3,229	3,179	2,991	2,971	3,030	3,002
Bank of Taiwan	1,506	1,860	2,385	2,739	2,956	3,080	2,634	3,092	3,080	2,825	2,818	2,862	2,816
Commercial banks	90	98	90	78	102	99	77	137	99	166	153	168	186

18. CURRENCY AND BANKING (*Cont'd*)

End of period

	1954	1955	1956	1957	1958	1959	1959 II	1959 III	1959 IV	1960 I	1960 II	1960 July	1960 Aug
CHINA (Taiwan, *million new Taiwan dollars*) (*Cont'd*)													
Exchange rate													
Buying:													
Sugar, Rice Exports	15.55	20.35	20.35	20.35	36.08		36.08						
Other Exports:													
Government	15.55	20.35	26.35	26.35	37.58	39.70	39.42	39.75	39.70	40.03	40.00	40.03	39.83
Private	15.55	26.35	26.35										
Non-Trade	15.55	21.95– 29.05	24.68 29.05	24.68 29.05	36.08 37.58		36.08 39.42						
Selling:													
Government Imports	18.78	24.78	24.78	24.78	36.38	36.38	36.38	36.38	36.38	36.38	36.38	40.03	39.83
Other Imports	18.78	32.28	32.28	32.28	37.78		39.62						
Non-Trade	15.65 18.78	24.78	24.78	24.78	36.38 37.78	39.70	36.38 39.62	39.75	39.70	40.03	40.00		
FEDERATION OF MALAYA and SINGAPORE (*million Malayan dollars*)													
Money supply	1,068	1,267	1,268	1,230	1,237	1,430	1,293	1,356	1,430	1,482	1,491	1,481	1,492
Currency: net active	711	861	892	889	895	1,016	926	963	1,016	1,024	1,042	1,044	1,043
Deposit money	357	406	376	341	345	414	367	393	414	458	449	437	449
Time deposits	243	338	320	305	355r	462	400	434	462r	483	510	526	537
Bank debits[h] △	...	1,438	1,600	1,679	1,628	1,762	1,748	1,724	1,882	1,888	1,865	2,048	1,861
Foreign assets[r]	1,291	1,542	1,468	1,375	1,460	1,749	1,573	1,657	1,749	1,788	1,828	1,806	1,823
Currency Board	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Claims on private sector[r]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other banks (net)	162	194	252	279	295	372	324	338	372	458	455	475	482
Claims on government[r]	99	95	98	104	113	140	125	143	140	147	158	162	161
Exchange rate (*par rate*)	3.06	3.06	3.06	3.06	3.06	3.06	3.05	3.05	3.06	3.05	3.05	3.05	3.05
HONG KONG (*million HK dollars*)													
Money supply													
Currency notes: in circulation	728	727	732	755	772	838	789	806	838	885	900	[illegible]	[illegible]
Bank clearings △	1,140	1,160	1,276	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDIA (*thousand million rupees*)													
Money supply[r]	18.32	20.47	21.79	22.76	23.50	25.21	25.31	24.33	25.21	27.33	27.02	26.72	26.59
Currency: net active	12.25	13.86	14.86	15.27	16.06	17.59	17.35	16.69	17.59	[illegible]	[illegible]	[illegible]	[illegible]
Deposit money	6.08	6.61	6.93	7.49	7.43	7.62	7.96	7.64	7.62	[illegible]	[illegible]	[illegible]	[illegible]
Private time deposits	5.26	6.13	6.98	8.93	11.40	13.98	12.75	13.73	13.98	14.26	14.97	14.52	14.96
Government deposits (Reserve Bank of India)	0.77	0.70	0.73	0.72r	0.79	0.90r	0.74	0.83	0.90	1.09	[illegible]	[illegible]	[illegible]
Bank clearings △	5.58	6.52	7.03	7.41	7.96	8.99	8.55	8.85	9.39	9.85	10.06	9.53	8.96
Foreign assets (Reserve Bank of India)	7.71	7.75	6.48	4.15	3.07	3.31	2.96	2.99	3.31	3.15	[illegible]	[illegible]	[illegible]
Claims on private sector	6.16	7.04	8.84	10.14	10.38	11.62	[illegible]	[illegible]	11.62	[illegible]	[illegible]	[illegible]	[illegible]
Commercial banks	5.95	6.78	8.46	9.59	9.64	10.55	[illegible]	[illegible]	10.55	[illegible]	[illegible]	[illegible]	[illegible]
Cooperative banks	0.21	0.26	0.38	0.55	0.74	1.07	[illegible]	[illegible]	1.07	[illegible]	[illegible]	[illegible]	[illegible]
Claims on government	12.11	14.05	16.93	21.88	26.33	29.12	28.20	28.43	29.16	[illegible]	[illegible]	[illegible]	[illegible]
Reserve Bank of India	6.04	7.13	9.82	14.13	16.35	17.35	18.03	16.82	17.37	15.74	18.28	19.24	18.88
Other banks	4.98	5.74	5.96	6.63	8.84	10.56	8.93	10.45	10.58	[illegible]	[illegible]	[illegible]	[illegible]
Treasury currency	1.09	1.18	1.15	1.12	1.14	1.21	1.24	1.16	1.21	1.30	1.34	1.31	1.28
Rates of interest (*% per annum*)													
Call money rate △	2.45	2.59	3.21	3.71	2.96	2.74	3.19	2.01	2.25	3.56	[illegible]	[illegible]	[illegible]
Yield of long-term gov't bonds[i] △	3.65	3.72	3.92	4.13	4.17	4.06	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Exchange rate (selling)	4.808	4.775	4.805	4.770	4.780	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDONESIA (*thousand million rupiah*)													
Money supply	11.12	12.23	13.39	18.91	29.37	34.89r	32.38	24.76	34.89r	[illegible]			
Currency: net active	7.47	8.65	9.37	14.09	19.87	26.38r	22.84	20.21	26.38r				
Deposit money	3.64	3.59	4.02	4.82	9.49	8.50	9.54	4.55	8.50				
Private time deposits	0.27	0.33	0.29	0.29	0.34	0.18	0.40	0.18	0.18	0.19			
Foreign assets (net)	1.73	2.77	1.68	1.26	2.48	14.75	2.73	2.67	14.75	16.23	...	...	
Bank Indonesia	1.15	1.95	0.90	0.58	2.15	12.43r	2.03	2.21	12.43	15.32r	16.06	16.00	15.85
Gross foreign assets	2.89	3.50	2.89	2.55	2.48	13.50	2.23	2.53	13.50	16.47	16.63	16.57	16.09
Foreign liabilities[j]	1.74	1.55	1.99	1.97	0.33	1.07r	0.20	0.32	1.07	1.15	0.57	0.57	0.24
Other banks	0.58	0.79	0.76	0.68	0.33	2.32	0.70	0.46	2.32	[illegible]			
Claims on private sector	2.83	4.02	4.93	4.47	6.56	13.08r	8.38	8.90	13.08r	17.00		...	
Bank Indonesia	0.46	0.86	0.86	0.77	1.77	2.46	1.56	2.38	2.46	2.96	..	...	
Other banks	2.37	3.16	4.07	3.73	4.79	10.62r	6.82	6.57	10.62r	14.04			
Claims on government	9.26	9.30	14.69	20.77	30.60	34.36	35.93	31.44r	34.36	[illegible]		...	...
Bank Indonesia	8.61	8.50	12.30	19.15	28.46	32.06	33.56	29.09	32.06	27.73r	32.62	31.08	[illegible]
Other banks	0.02	0.02	1.53	0.67	1.03	0.90	1.09	1.07	0.90	[illegible]			
Treasury currency	0.63	0.78	0.86	0.95	1.11	1.40	1.19	1.27	1.40	1.53	...	...	...
Exchange rate:													
Principal export rate	11.36	11.36	11.36– 13.57	22.7	30.3	36.0	30.3	36.0	36.0	36.0	36.0	36.0	45.0
Principal import rate	11.44	11.48– 22.95	11.48– 22.95	28.4– 42.6	37.9– 56.9	45.0– 67.5	37.9– 56.9	45.0– 67.5	45.0– 67.5	45.0– 67.5	45.0– 67.5	45.0– 67.5	45.0 72.0
Other import rate	15.26– 22.89	34.42– 57.38	[illegible]– 57.38	56.8– 78.1	75.8– 104.2	90.0– 135.0	75.8– 104.2	90.0– 135.0	90.0– 135.0	90.0– 135.0	90.0– 135.0	90.0– 135.0	200.0

18. CURRENCY AND BANKING *(Cont'd)*

End of period

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
IRAN *(thousand million rials, 20th of last month of period)*													
Money supply	18.52	20.22	23.59	27.70	36.33	39.96	37.25	38.77	39.96	44.47	...	...	...
Currency: net active	16.84	17.71	20.78	24.26	27.79	30.48	29.59	30.75	30.43	34.30	...	...	...
Deposit money	1.68	2.51	2.81	3.44	7.00	9.49	7.66	8.02	9.49	10.17	...	...	...
Private time deposits	3.68	4.12	5.31	5.79	7.30	9.80	8.82	9.08	9.80	11.36	...	...	...
Government deposits	3.97	4.08	4.57	6.07	8.08	11.28	10.25	9.12	11.28	9.40	8.79	12.70	9.48
Bank debits △	13.98	15.33	16.80	18.20	20.71	20.62	20.26	20.33	20.74	20.61	20.26	20.41	...
Foreign assets[k] (National bank)	6.76	7.11	8.44	18.57	19.13	16.12	15.84	14.40	16.12	14.27	13.03	17.18	15.32
Claims on private sector	8.06	9.72[r]	10.82[r]	13.98	22.61	32.24	27.26	30.80	32.24	33.48[r]	...	...	...
National Bank	4.49	5.72	7.45	8.37	12.73	15.87	13.56	15.31	15.87	16.00	17.46	18.22	18.11
Commercial banks	3.57	3.99	3.36	5.61	9.88	16.37	13.70	15.49	16.37	17.47[r]	...	...	...
Claims on government (National bank)	11.24	11.08	11.94	12.59	14.14	13.64	14.56	14.05	13.64	14.45	13.72	15.38	14.25
Claims on official entities (National bank)	5.82	6.24	6.88	9.09	12.27	15.60	13.67	15.46	15.60	16.25	16.92	16.73	16.58
Exchange rate: selling	84.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50
JAPAN *(thousand million yen)*													
Money supply	2,013	2,331	2,714	2,824	3,185	3,711	3,023	3,117	3,711	3,519	3,510	...	...
Currency: net active	586	627	721	750	795	604	702	679	604	752	822	...	...
Deposit money	1,427	1,705	1,993	2,074	2,390	3,107	2,321	2,438	3,107	2,767	2,688	...	...
Time deposits (other banks)	2,534	3,064	3,837	4,767	5,867	7,236	6,447	6,830	7,236	7,581	7,909	...	...
Government deposits	171	179	210	221	251	279	258	256	279	434	328	...	...
Bank of Japan	67	61	66	46	54	54	41	36	54	198	40	...	...
Other banks	104	118	144	175	197	225	218	220	225	236	288	...	...
Bank clearings △	2,430	2,750	3,342	4,264	4,745	4,775	4,641	4,730	5,134	5,037	5,327	5,156	5,711
Foreign assets	302	447	457	272	396	505	451	466	505	478	465	...	...
Bank of Japan	— 31	170	153	— 6	91	186	146	148	186	188	194	...	...
Foreign Exchange Fund	342	289	355	282	305	386	354	374	386	400	431	...	...
Other banks	— 9	— 12	— 51	— 4	—	— 67	— 49	— 56	— 67	—110	—158	...	...
Claims on private sector	4,164	4,684	5,917	7,253	8,501	10,287	9,177	9,690	10,287	10,766	11,255	...	...
Claims on government	264	450	465	471	675	845	522	492	845	772	634	...	...
Rates of interest (% *per annum*)													
Call money rate (Tokyo) △	7.84	7.36	6.57	10.94	9.69	8.43	8.58	8.40	8.40	8.40	8.40	8.40	8.40
Yield of long-term gov't bonds[m] △	7.01	6.33	6.34	6.33	6.32	6.32	6.32	6.32	6.32	6.32	6.32	...	...
Exchange rate *(par rate)*	360.0	360.0	360.0	360.0	360.0	360.0	360.0	360.0	360.0	360.0	360.0	360.0	360.0
KOREA, Republic of *(thousand million hwan)*													
Money supply	58.1	93.5	120.9	145.1	192.6	209.9	206.7	203.8	209.9	211.1	206.9	203.9	203.6
Currency: in circulation	40.0	58.8	73.4	86.2	111.1	123.8	94.0	102.0	123.8	111.7	117.9	119.0	117.4
Deposit money	18.1	34.7	47.6	59.1	81.5	86.3	112.7	101.8	86.3	99.4	89.0	84.6	85.4
Uncleared checks and bills	4.1	5.9	14.9	12.9	20.5	2.1	1.7	2.3	2.1	4.0	25.7	22.1	32.7
Time deposits[n]	5.0	10.0	16.9	17.6	24.0	63.4	40.2	48.5	63.4	80.3	74.0	67.7	66.1
Bank clearings △	51.8	107.4	207.7	201.2	226.9	292.3	286.4	285.9	322.2	360.1	361.9	361.3	408.7
Bank debits △	...	...	306.5	361.3	417.5	559.9	577.8	549.6	640.4	665.9	661.3	638.3	696.0
Government deposits	17.6	33.4	68.0	133.0	125.9	125.0	116.2	119.7	125.0	94.0	102.5	111.5	119.1
Counterpart funds	16.1	14.2	83.0	114.3	98.9	63.7	78.5	76.8	63.7	37.6	39.1	65.3	59.5
Foreign assets (Bank of Korea net)	10.5	24.0	25.5	33.5	49.3	50.5	49.7	52.3	50.5	62.0	60.6	60.7	63.5
Gross foreign assets	19.0	47.4	48.6	57.0	72.4	72.7	72.5	74.5	72.7	90.6	89.3	90.4	92.8
Foreign liabilities[p]	8.5	23.4	23.1	23.5	23.1	22.2	22.8	22.2	22.2	28.7	28.9	29.8	29.3
Claims on private sector	24.2	42.7	76.9	113.5	162.8	187.0	178.4	180.7	187.0	212.0	209.9	212.0	215.2
Bank of Korea	2.0	5.5	5.8	5.9	5.4	5.9	5.3	5.8	5.9	7.9	6.8	6.6	6.5
Other banks	22.2	37.2	71.1	107.7	157.4	91.5	173.2	175.2	181.1	204.1	203.1	205.4	208.7
Claims on government	68.7	111.4	213.5	304.9	308.3	300.0	297.8	291.3	300.0	236.9	238.4	265.9	260.1
Bank of Korea	67.5	109.5	209.7	299.9	303.4	295.5	293.0	286.6	295.5	233.9	235.1	262.1	256.2
Other banks	1.3	1.9	3.7	5.0	4.9	4.5	4.8	4.8	4.5	3.0	3.3	3.8	3.8
Claims on official entities	1.0	3.5	5.4	9.6	17.5	17.4	17.1	16.9	17.4	17.9	17.8	17.9	18.4
Bank of Korea	0.5	2.7	4.0	8.0	16.0	16.0	16.0	16.0	16.0	16.4	16.4	16.4	16.4
Commercial banks	0.4	0.8	1.4	1.6	1.5	1.4	1.2	1.0	1.4	1.5	1.4	1.5	2.0
Exchange rate (official)	180	500	500	500	500	500	500	500	500	650	650	650	650
PAKISTAN *(million rupees)*													
Money supply	3,804	4,369	4,921	5,234	5,502	5,762	5,560	5,496	5,762	5,890[r]	5,856	5,682	5,647
Currency: in circulation	2,575	2,990	3,464	3,583	3,742	3,844	3,647	3,543	3,844	3,947[r]	3,815	3,666	3,646
Deposit money	1,229	1,380	1,457	1,651	1,760[r]	1,918	1,935	1,986	1,918	1,943	2,043	2,016	2,000
Time deposits	807	889	968	1,083	1,180	1,454	1,239	1,346	1,454	1,501[r]	1,439	1,518	1,532
Bank clearings △	555	593	696	761	789	980	860	929	1,205	1,197	1,197	1,141	1,216
Government deposits	222	163	61	69	65	200	177	351	200	75	124	218	216
Foreign assets (State Bank of Pakistan)[q,r]	1,147	1,774	1,854	1,594	1,485	1,908	1,753	1,826	1,908	2,000	1,909	1,859	1,865
Claims on private sector (scheduled banks)	984	1,183	1,256	1,294	1,314	1,509	1,200	1,235	1,509	1,690	1,539	1,559	1,598
Claims on government[r]	2,595	2,634	3,250	4,065	4,460	4,526	4,523	4,477	4,526	4,538	4,600	4,633	4,714
State Bank of Pakistan[r]	1,428	1,338	1,848	2,507	2,791	2,658	2,772	2,645	2,658	2,698	2,770	2,814	2,812
Other banks	937	1,036	1,119	1,260	1,367	1,558	1,446	1,532	1,558	1,521	1,517	1,518	1,603
Treasury currency	230	260	283	298	302	310	305	300	310	321	313	301	299
Claims on provincial governments	145	122	117	228	256	271	220	246	271	221	301	285	226
State Bank of Pakistan	53	12	2	119	122	93	86	79	93	44	125	110	50
Scheduled banks	92	110	115	109	134	178	134	166	178	177	176	176	176
Rates of interest (% *per annum*)													
Call money rate △	1.30	1.45	2.04	2.03	1.66	1.53	1.28	0.95	1.44	3.85	3.32	1.55	2.00
Yield of long-term government bonds[s] △	3.14	3.15	3.15	3.20	3.20	3.25	3.24	3.23	3.32	3.47	3.48	3.49	3.50
Exchange rate (selling)	3.340	4.782	4.805	4.778	4.785	4.790	4.765	4.782	4.790	4.775	4.775	4.772	4.770

18. CURRENCY AND BANKING *(Cont'd)*

End of period

	1954	1955	1956	1957	1958	1959	1959			1960			
							II	III	IV	I	II	July	Aug
PHILIPPINES (*million pesos*)													
Money supply	1,226	1,336	1,499	1,598	1,738	1,842	1,790	1,813	1,842	1,810	1,800	1,778	1,782
Currency: net active	676	670	718	781	818	894	796	822	894	875	853	872	878
Deposit money	550	666	780	817	919	948	994	991	948	935	947	906	904
Private time deposits	526	586	658	803	868	1,032	932	976	1,032	1,029	1,035	1,045	1,057
Bank clearings △	550	614	739	876	915	*1,058*	1,203	*1,104*[v]	1,050	1,127	...	...	...
Bank debits[t] △	815	921	1,145	1,335	1,492	1,768	1,800	1,794	1,860	1,985	...	...	...
Government deposits	132	196	281	169	225	278	363	288	278	351	390	444	429
Central Bank of the Philippines	32	63	112	56	154	207	298	216	207	256	297	373	352
Philippine National Bank	100	133	168	113	71	71	65	72	71	*95*	*93*	*71*	*77*
Foreign assets[r] (*net*)	545	418	450	201	182	311	244	319	311	316	407	428	424
Central Bank[r]	415	310	322	62	75	165	109	162	165	177	252	301	306
Other banks	130	108	128	139	107	146	135	157	146	139	155	127	118
Claims on private sector (other banks)	935[r]	1,106	1,254	1,513	1,588	1,779	1,650	1,703	1,779	1,810	1,806	1,831	1,864
Claims on government[r]	417	577	707	780	907	1,033	1,034	979	1,033	1,040	1,032	1,005	1,010
Central Bank of the Philippines[r]	304	349	381	632	762	876	887	836	890	890	879	853	858
Other banks	113	228	326	147	144	143	148	144	143	150	153	152	152
Claims on official entities	160	226	268	376	462	501	489	494	501	506	528	534	529
Central Bank of the Philippines[u]	115	185	198	315	393	418	409	408	418	422	442	450	445
Other banks	45	41	68	60	69	84	80	85	84	84	86	84	84
Exchange rate (selling)	2.358 2.015	2.358 2.015	2.015	2.015	2.015	2.519 2.015	2.015	2.519 2,015	2.519 2,015	2.519 2.015	2.519 2.015	2.519 2.015	2.519 2.015
THAILAND[r] (*million baht*)													
Money supply	6,437	7,227	7,728	8,197	8,452	9,083	8,264	8,458	9,083	9,313	9,153	9,249	...
Currency: net active	4,548	5,179	5,424	5,573	5,504	5,785	5,411	5,431	5,785	5,904	5,593	5,649	...
Deposit money	1,888	2,048	2,304	2,624	2,948	3,298	2,853	3,027	3,298	3,410	3,560	3,600	...
Time deposits	632	776	1,192	1,473	1,770	1,899	1,731	1,868	1,899	1,994	2,072	...	...
Government deposits	586	521	597	658	704	909	938	868	909	953	953	...	...
Bank of Thailand	442	331	447	413	494	502	535	464	502	500	540	...	...
Deposit money banks	144	190	150	245	212	407	402	404	407	453	413	...	...
Bank clearings △	2,230	2,598	2,816	3,095	3,451	3,764	3,884	3,481	3,811	4,121	3,765	3,708	...
Foreign assets (*net*)	365	6,078	6,225	6,396	6,124	5,898	5,931	6,079	5,898	6,140	...	...	...
Bank of Thailand	...	4,759	5,065	5,401	5,303	5,203	5,420	5,335	5,203	5,340	5,388	...	...
Deposit money banks	...	67	− 80	− 31	− 4	−270	−329	−116	−270	−318	...	...	...
Exchange Fund	...	1,252	1,240	1,026	825	966	840	860	966	...	...	...	...
Claims on private sector	2,106	2,644	3,219	3,712	4,354	4,913	4,680	4,832	4,913	5,254	5,265	...	...
Claims on government	6,070	4,616	5,165	5,641	6,058	6,589	5,854	5,993	6,589	6,606	6,272	...	...
Treasury bill rate (% *per annum*)△	2.27	2.26	2.28	2.27	2.91	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99
Exchange rate (selling)	20.88	20.91	20.66	20.90	21.10	21.18	21.17	21.19	21.19	21.19	21.19	21.19	21.19
VIET-NAM, Republic of (*thousand million piastre*)													
Money supply	...	12.39	12.16	10.97	11.71	14.07	12.82	13.44	14.07	15.49	15.37	15.58	16.26
Currency: net active	...	6.78	8.26	7.56	7.86	8.91	8.37	8.66	8.91	9.80	10.06	10.25	10.52
Deposit money	...	5.62	3.90	3.41	3.86	5.16	4.45	4.78	5.16	5.69	5.31	5.32	5.74
Time deposits	...	0.70	1.26	0.85	1.08	1.15	1.12	0.93	1.15	1.07	1.02	1.08	1.07
Bank clearings △	...	3.13	2.86	3.20	3.21	3.43	3.42	3.32	3.66	3.83	3.98	...	...
Foreign assets[r]	...	4.29	4.58	4.70	5.66	6.19	5.09	5.56	6.19	6.57	6.58	6.68	6.91
Banque Nationale du Viet-Nam	1.05	4.36	4.61	4.40	5.33	5.84	4.90	5.39	5.84	6.62	6.47	6.54	6.79
Other banks (net)	...	0.06	0.04	0.30	0.33	0.35	0.18	0.17	0.35	0.25	0.12	0.14	0.13
Claims on private sector	...	1.62	1.81	3.22	3.01	3.67	3.38	3.62	3.67	3.99	4.15	4.22	4.40
Claims on government[r]	...	13.13	12.46	11.73	12.43	13.34	12.95	12.96	13.34	13.58	13.12	13.13	13.33
Exchange rate:													
Official rate	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Controlled free rate	—	—	—	73.00	73.50	73.50	73.50	73.50	73.50	73.50	73.50	73.50	73.50

GENERAL NOTE: *Net active currency:* Total currency outstanding less holdings in all banks including the central bank and in government treasuries. *Currency in circulation:* Total currency outstanding less holdings in all banks including the central bank. *Deposit money:* Private deposits in all banks, subject to cheque or withdrawable on demand, excluding inter-bank liabilities. *Government deposits:* Including government currency holdings. *Bank clearings:* Total value of cheques and other collection items cleared through clearing houses. *Claims on private sector:* Claims by the banking system arising from the rendering of loans and advances, discounting of bills, the holding of securities in private companies, etc. *Claims on government:* Holdings of government bonds, treasury bills and government guaranteed securities by the banking system, plus circulation of treasury currency. *Rates of interest:* Rates prevailing in the capital city, except for India, where Bombay rates are used. *Call money rate* is inter-bank rate on money at call. *Exchange rates* are shown in unit of national currency per US dollar.

For the detailed explanation please see IMF: International Financial Statistics.

△ Monthly averages or calendar months.

a. Deposits of State Boards in State Commercial Bank (excluding the State Agricultural Bank).

b. Including a constant amount of 99 million kyats, which is the value of a promissory note issued as cover for the currency issue.

c. 5 year treasury bonds.

d. Debits to demand deposits of private sector.

e. 3% national development loan 1965-1970 to earliest redemption date.

f. Including bank's holdings of stocks and debentures.

g. Including the counterpart of post office demand deposits.

h. Cheques sent out for local clearing and debits to current deposit accounts.

i. Running yield of 3% consols 1986 to earliest redemption date.

j. Payments agreement liabilities, mainly to Japan and the Netherlands.

k. Foreign assets were revalued in May 1957. The revaluation proceeds (7 billion rials) are held by the National Bank and are to be used for long term development.

m. Weighted yield (simple rate of interest) to latest redemption date of medium dated government bonds issued during the period stated.

n. Including deposits of local government and government institutions in commercial banks and non-governmental foreign currency deposits in Bank of Korea.

p. Clearing accounts with Japan.

q. Including outstanding assets receivable from the Reserve Bank of India under the partition agreements; excluding foreign assets of Banking Department.

s. Yield to maturity of 3% bonds 1968.

t. Total debits to checking account of private sector.

u. Including a constant amount of 107 million persos from 1952, representing the difference between foreign assets transferred from the Treasury and its note and coin issue, for which the Bank assumed liability.

v. July.

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UNITED NATIONS

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